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SOUTH COAST-BAFFIN ISLAND

AN AREA ECONOMIC SURVEY

INDUSTRIAL DIVISION

G.M. HIGGINS

NORTHERN ADMINISTRATION BRANCH
DEPARTMENT OF INDIAN AFFAIRS
AND NORTHERN DEVELOPMENT

THE SOUTH COAST OF BAFFIN ISLAND

an area economic survey

1967

A.E.S.R. #67/2

by

G. Higgins

The views, conclusions and recommendations expressed herein are those of the author and not necessarily those of the Department of Indian Affairs and Northern Development.

Industrial Division,
Department of Indian
Affairs and Northern
Development.

Ottawa, June 1968.

PREFACE

This report is one of a series of Area Economic Surveys carried out by the Industrial Division of the Department of Indian Affairs and Northern Development.

These surveys are a continuing part of the Department's efforts to determine the basis for local economic and social progress in the Northwest Territories. Basically the surveys are intended to:

1) Assess the renewable resources as to their ability to sustain the local population.

2) Determine the degree of exploitation of these resources and the efficiency of their use.

3) Investigate and explain the social and economic factors affecting resource utilization.

4) Recommend ways and means whereby the standard of living of the local people might be improved.

As the reasons for these surveys are practical, the material presented in the reports is selected for its relevance in this respect; much academic material gathered in the course of the investigation which may have been taken into account in the deliberations is necessarily excluded from these reports. On the other hand,authors have been given wide latitude in their approach and have been encouraged to give consideration to key problems of a theoretical nature and to include such theoretical argument where its inclusion is thought to contribute to the understanding of the material presented and of the practical conclusions drawn.

The reports are published primarily for use within the Department, for distribution to other interested government agencies and for limited distribution to libraries, universities and organizations and individuals actively engaged in northern research, administration or development.

The following reports in this series have been published to date or are in preparation:

A.E.S.R. #	Title	Author
58/1	Ungava Bay	J. Evans*
60/1	The Squatters of Whitehorse	J. Lotz
62/1	Southampton Island	D. Brack
62/2	Tuktoyaktuk-Cape Parry	G. Abrahamson*
62/2	Western Ungava	R. Currie*
63/1	The Copper Eskimos	G. Abrahamson
63/2	Keewatin Mainland	D. Brack and D. McIntosh*
63/3	Yukon Territory Littoral	R. Currie*
65/1	Banks Island	P. Usher
65/2	Northern Foxe Basin	G. Anders
66/1	The Mackenzie Delta	D. Bissett
66/2	Rae-Lac La Martre	G. Anders
66/3	Frobisher Bay	S. MacBain (Miss)
66/4	East Coast-Baffin Island	G. Anders, Ed.

67/1	Lancaster Sound	D. Bissett
67/2	South Coast - Baffin Island	G. Higgins
67/3	South Shore-Great Slave Lake	D. Radojicic
67/4	Central Mackenzie	D. Villiers (Miss)

* Out of print at time of publication; to be re-issued.

Table of Contents

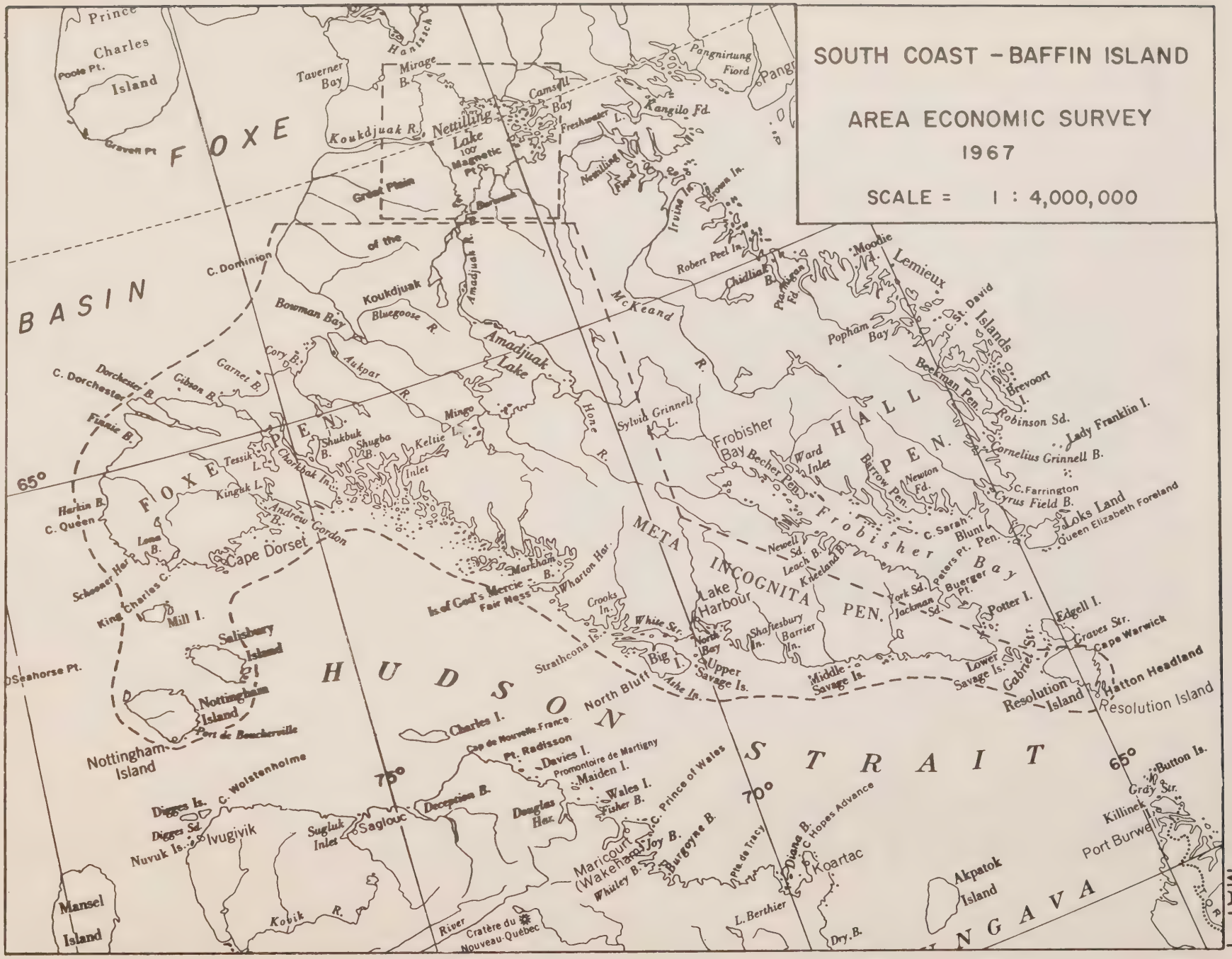
TABLES

FIGURES

ILLUSTRATIONS PAGE

ABBREVIATIONS USED IN THE TEXT

D.I.A. & N.D.	- Department of Indian Affairs & Northern Development
D.N.H.W.	- Department of National Health & Welfare
D.O.T.	- Department of Transport
G.S.C.	- Geological Survey of Canada
R.C.M.P.	- Royal Canadian Mounted Police
N.W.T.	- Northwest Territories
F.R.B.	- Fisheries Research Board
C.W.S.	- Canadian Wildlife Service
W.B.E.C.	- West Baffin Eskimo Co-operative
H.B.C.	- Hudson's Bay Company
C.A.P.	- Canadian Arctic Producers Ltd.


SOUTH COAST - BAFFIN ISLAND
AREA ECONOMIC SURVEY
1967
SCALE = 1 : 4,000,000
FOXE BASIN
HUDSON STRAIT
FOXE PEN.
HALL PEN.
META INCOGNITA PEN.
Frobisher Bay
Cape Dorset
Nottingham Island
Salisbury Island
Mansel Island
Resolution Island
Lok's Land
Akpatok Island
Ivugivik
Saglouc
Koartac
Port Burwell
Prince Charles Island
Lemieux Islands
Amadjuak Lake
Nettilling Lake
Koukdjuak R.
Bowman Bay
Lake Harbour
Big I.
Charles I.
Davies I.
Wales I.
Maiden I.
Button Is.
Hatton Headland
Cape Warwick
Edgell I.
Potter I.
Mill I.
Seahorse Pt.
65°
70°
75°

INTRODUCTION

The area economic survey of the south coast of Baffin Island is an attempt at a general examination of the present-day economy of two Eskimo communities, Cape Dorset and Lake Harbour which, between them, share the resources and the problems of a coastline five hundred miles in length bordering on the Hudson Strait. The communities themselves are separated by some three hundred miles of this same coastline.

In its size, the population is such that if each family were assumed to consist of five persons, the whole of it could be housed in an apartment building of modest size, containing about one hundred and twenty-five family units.

The final ingredient for perspective is supplied by the income segment of the economy which, for a whole year, may be likened to the gross receipts of a medium size supermarket during one month.

In spite of the small populations and dwarfed economies of these and similar settlements in the general region, they have become the focus of considerable attention emanating from two Governments and taking the form of a rising investment in money, time and energy.

What began a few years ago as a quest to ease the Eskimo along in his transition to a western-type society has, in a relatively short time, gathered a quite substantial momentum. Despite all the good they have done, all parties to the transition are heirs to a legacy of problems, some of them rather complex and difficult to solve.

The rate of increase of the Eskimo population is the highest in Canada. Commensurate with this phenomenon, but only partly as a result of it, is a rapidly rising dependence on the material comforts of our western society. A manifestation of this is evident in the increased demand for more and more wage employment and social services of all kinds. The fauna resources are no longer able to satisfy the Eskimo's expanded appreciation of "living" and the often-used term "living off the land" is rather anachronous where today's Eskimo is concerned.

Relatively large injections of investment capital into the Archipelago could alleviate many of the more troublesome problems encountered in the region, but no public is likely to stand for very long a one-way movement of money, time and energy resources without substantially visible evidence of tangible benefits. These do not appear obvious at the present time.

Problems may require solutions which diverge noticeably from patterns established in the past and even from those in evidence at the present time. The Eskimos' transition may, perhaps, have to be enacted in a combination of ways tied basically to a compromise between consolidation and re-location. Otherwise, there exists the strong possibility that many of them will become stifled and wholly dependent on economies which, in most instances, cannot possibly keep pace with the Eskimos' increasing numbers and needs in the forseeable future.

From the point of view of development a choice may have to be made between those communities which have demonstrated a large measure of industry and achievement and those that have not, whatever the reason. As Government resources for community maintenance are not unlimited, it would seem imperative that the greatest possible amount of tangible encouragement be given to growth communities at the expense of those that cannot be classed as such. Not to do so would tend toward inefficiency in the use of these resources and would further tend to lower the over-all level of progress and submerge the bright spots that do exist.

This report avoids discussion of early explorations in the area and of any treatment of Eskimo culture, choosing instead to restrict itself more closely to the objectives of the report as expressed in the preface. A voluminous and interesting literature exists regarding the former and is available to those who may wish to delve into it.

Field work was carried out by the author with the very able assistance of T. Badenduck, a graduate student of McGill University, who contributed much to the survey. Time in the field amounted to approximately three and one-half months, during which settlement data were accumulated, reconnaissance trips by dog-team and ski-doo were made, and a limited amount of seal netting and test fishing was conducted. The field work was followed by data compilation and additional research at both Frobisher Bay and Ottawa during October through April, 1968.

ACKNOWLEDGEMENTS

The author is greatly indebted to a host of Government and private individuals who gave unstintingly of their time and hospitality, without which movement in the area would have been curtailed and much settlement data would not have been accumulated.

The numbers of persons so involved is substantial and, in order to extend thanks as equitably as possible, the organizations with which they were associated are named:

The West Baffin Eskimo Co-operative
Royal Canadian Mounted Police, "G" Division
Anglican Church
Department of Transport
The Hudson's Bay Company
Fisheries Research Board, Arctic Unit
Canadian Wildlife Service
Department of National Health & Welfare
The Air Services Division, Post Office Department
Mines Branch, Department of Energy, Mines & Resources
Geological Survey of Canada
Nordair Limited
Wheeler-Northland Airways Ltd.
Austin Airways Ltd.
Georgian Bay Airways Ltd.
The Bell Telephone Co. of Canada Ltd.
The Mica Co. of Canada Ltd.
Canadian Arctic Producers Ltd.
Mr. W. Kemp, who was undertaking a study of the contact-traditional period in Eskimo history in the area
Department of Indian Affairs and Northern Development

CHAPTER 1
PHYSIOGRAPHY

A very comprehensive treatment of the "physiography of southern Baffin Island" is contained in a report with that title prepared by the Department of Geography, McGill University, for the U.S.A.F. Project Rand 1963. The physiography has been described also by officers of the G.S.C. who have worked in the area from time to time.

The discussion of the physiography in this report will consist of a brief description of the major physiographic units recognized in the survey area and will draw heavily from the sources noted above; especially the Rand Report.

The companion map 2 shows the boundaries of the physiographic provinces along with second order divisions. In the south coastal sector, the third order divisions are shown as well because this is the area of principal interest. Descriptions will, however, be general and detail will be avoided.

Two physiographic provinces have been isolated in the survey area; these are the Foxe Basin Lowlands and the Baffin Uplands. The lowlands are underlain chiefly by palaeozoic limestones, but extend over the Precambrian complex in parts. The uplands are confined almost entirely to the areas of crystalline rocks.

FOXE BASIN LOWLANDS

These lowlands are characterized by estuarine flats along the edge of Foxe Basin towards which they gently incline. To the south and east they grade through plains to plateaux. The average elevation of the lowland province can be placed at roughly 250 feet, ranging from sea level in the west to 500 feet near Amadjuak Lake.

The surficial covering ranges from silty clays in the flats regions through a gravel/clay till on the plains and plateaux to coarse boulder tills on approaching the uplands.

In general, the estuarine flats are featureless except for a series of low ridges in the Foxe Peninsula Lowlands. The limestone plains and plateaux as well exhibit a generally featureless surface, poorly drained and relatively free from rock outcroppings except in the banks and bottoms of streams. The high regions of the province give way to undulating surfaces and thence to hilly surfaces adjacent to the Baffin Uplands.

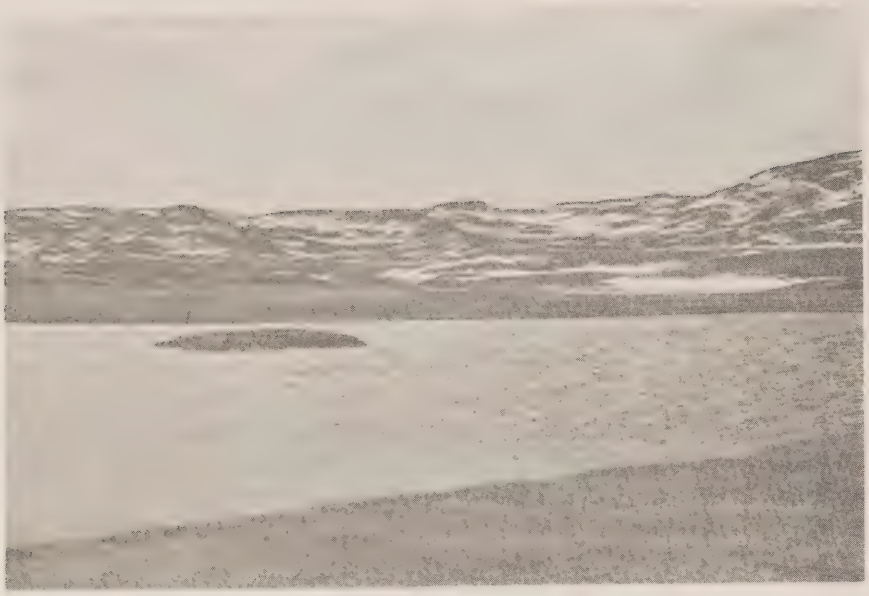


PLATE 1 - View of Kingnait Hills, Cape Dorset Upland Region, near Cape Dorset.

BAFFIN UPLANDS

This province is bisected by the Grinnell Lowlands which form a trough-like feature of low, local relief connecting Frobisher Bay with Amadjuak Lake. The dominant physiographic feature in the southern part of the province is the Frobisher Plateau which is entirely within the survey area.

The plateau has a high ridge, or rim, which trends north-west along the edge of the Frobisher Peninsula, overlooking the bay. From this ridge, the plateau assumes a south-westerly slope to Hudson Strait. Over that distance, a number of physiographic divisions have been recognized.

The greatest elevations are encountered along the ridge itself which reaches about 2,800 feet at the Grinnell and Terra Nivea glaciers. Otherwise, it has a fairly uniform elevation in the order of 2,500 feet. In the direction of the Strait, several north-west trending zones occupy successively lower levels at fairly uniform elevations. About mid-way in the peninsula, a zone with a general elevation of 2,000 feet is evident; about forty miles inland from the Strait, and conforming quite well with the edge of the plateau, the elevation approximates 1,000 feet, while nearer the coast the country becomes hilly, but with a discernable general elevation of roughly 500 feet. There are, however, abrupt changes in local elevation nearer the Straits.

The coastline is typical of an area undergoing marine emergence; this is especially characteristic between Markham Bay and Cape Dorset. The broad belt of islands along the south coast is indicative of an extension of the dissected hill topography below the north shore of Hudson Strait. Behind the island belt, the shoreline is indented by numerous inlets and fiords, some of which extend many miles inland.

Deeply incised valleys are typical of the plateau region and many of them constitute gorges. The most notable of these along the south coast is the valley of the Soper River which rises in a deeply incised gorge in the plateau and broadens considerably upon entering the Soper Hills to the south-west.

The surface of the plateau is heavily glaciated and relatively smooth as a result. There are localized areas of glacial till but, generally, the upper surfaces are stripped of surficial cover and bare outcrop predominates.

It may be said that the whole of the Baffin Uplands is extremely rugged topographically. The same cannot be said of the Foxe Basin Lowlands with the exception of the Cape Dorset Upland, but this province as well possesses a certain ruggedness all too real to the traveller.

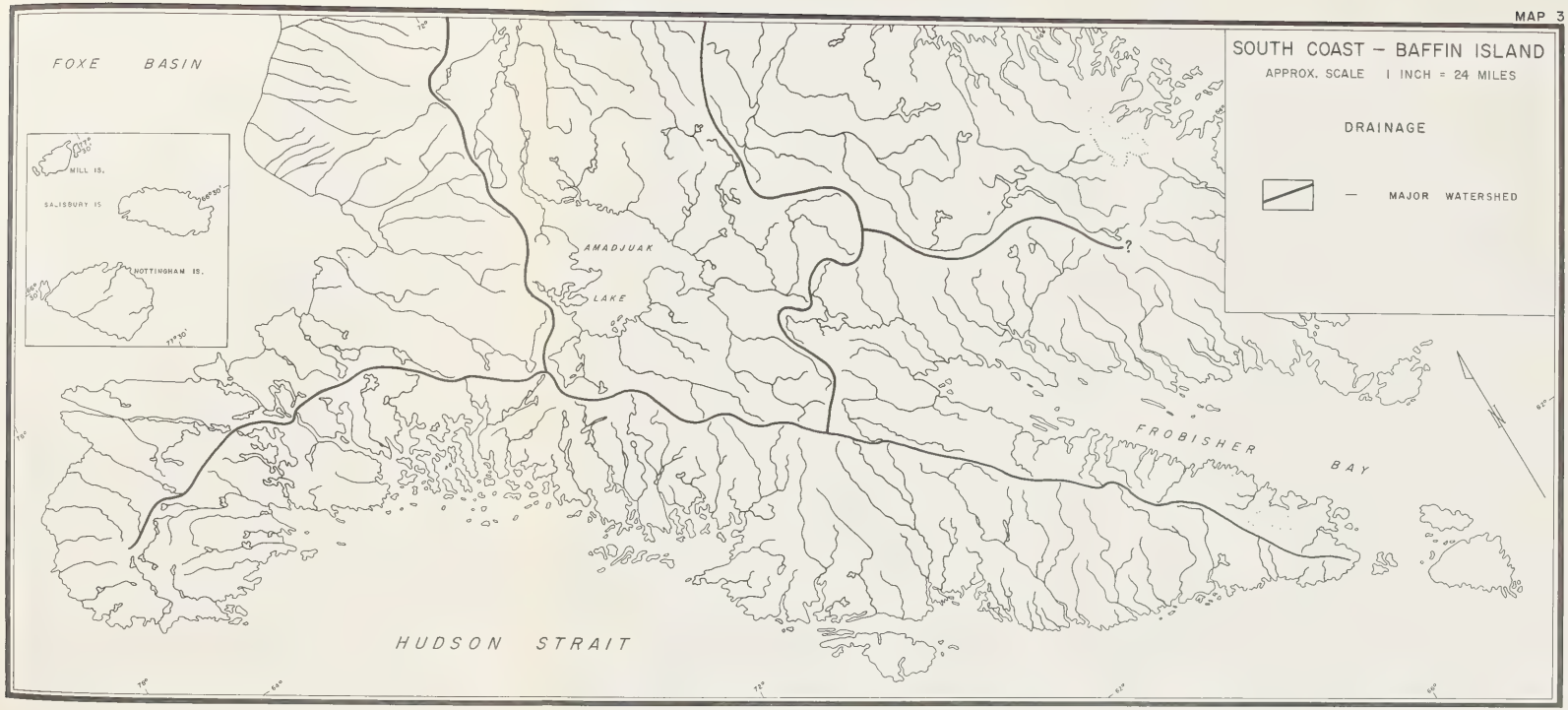
DRAINAGE

The principal watershed in the area trends north-westerly, commencing at East Bluff at the tip of the Frobisher Peninsula, and terminating in the Foxe Peninsula near the Harkin Hills.

A branch trends northerly from near Mingo Lake and terminates on the Foxe Basin coast south of the Koukdjuak River. A second branch, trending in a northerly direction, commences north-east of Markham Bay and terminates on the north coast of Foxe Basin after reaching nearly to the Penny Highland snowfield in the Cumberland Peninsula. These watersheds delimit the extensive but shallow Nettilling/Amadjuak drainage basin.

The largest drainage feature in southern Baffin Island appears to be the Nettilling/Amadjuak Basin, with a length of approximately 285 miles and an average width of roughly 80 miles. It is drained by the Koukdjuak River which empties into Foxe Basin. Most other streams and rivers of size empty directly into the Hudson Strait and are generally swift and punctuated by rapids and falls. With the exception of the Soper River, which itself requires a portage at the head of Soper Lake, few if any of the rivers along the south coast are truly navigable.


SOUTH COAST – BAFFIN ISLAND
APPROX. SCALE 1 INCH = 24 MILES
PHYSIOGRAPHY
LEGEND
PHYSIOGRAPHIC PROVINCE
SECOND – ORDER DIVISION
THIRD – ORDER DIVISION
FOXE BASIN
NETTILLING
FOXE
LOWLAND
KOUKDJUAK
BAFFIN UPLANDS
LOWLANDS
BASIN
AMADJUAK
LAKE
GRINNELL LOWLANDS
FOXE PENN. LOWLANDS
PLAINS
BAFFIN
FROBISHER
FROBISHER BAY
PLATEAU
LOWLANDS
CENTRAL
TESSIK PLAIN
CHORKBAK
HILLS
KIMMIK
LOWLAND
MARKHAM
SOPER
HILLS
UPLANDS
HARKIN
CAPE DORSET
HILLS
KINGNAIT HILLS
UPLAND
OLGA
HILLS
LOWLANDS
HUDSON STRAIT
MILL IS.
SALISBURY IS
NOTTINGHAM IS
64° 30'
77° 30'


SOUTH COAST – BAFFIN ISLAND
APPROX. SCALE 1 INCH = 24 MILES
DRAINAGE
MAJOR WATERSHED
FOXE BASIN
MILL IS.
SALISBURY IS
NOTTINGHAM IS.
AMADJUAK
LAKE
FROBISHER
BAY
HUDSON STRAIT

CHAPTER 2

GEOLOGY

INTRODUCTION

A surprisingly large amount of valuable geological work has been carried out in the survey area, culminating in the mapping of geologic structure by the Geological Survey of Canada in recent years.

The first really systematic geological traversing was done by R. Bell of the G.S.C. 1885 and 1887. Useful observations were contributed by others in earlier years. F. Boas is credited with advising Bell of the existence of fossiliferous limestone outcropping near the head of Frobisher Bay (Silliman Limestone) and supplying other useful data pertinent to the south coast region of Baffin Island. In the 1920's Soper provided useful geologic data concerning the Lake Harbour area.

The treatment of geology in this report will of necessity be little more than a summary based on previous works; especially those of the G.S.C. Economic geology has not been as well developed as other aspects of geology but is expanded wherever it was possible to do so because certain local minerals are, or perhaps could be, of importance to the local Eskimos. This is especially true, for example, in the case of stone for carvings, upon which the Eskimos depend for an important part of their income. As well, it is hoped that, by drawing attention to certain other minerals that are known to occur in the area, impetus may be given to their assessment as potential sources of income through mining on a very small scale.

GENERAL GEOLOGY

The area is underlain chiefly by a Precambrian complex which is the northward extension of the Canadian Shield; and in part by Palaeozoic limestones of middle Ordovician age. The Precambrian units are thought to decrease in age from south-east to north-west. Map 4 shows the general distribution and approximate boundaries of the Precambrian and Palaeozoic.

Structurally, the south-coast region displays intense metamorphism and complex folding. Axes of major folds in the vicinity of Mingo Lake and Andrew Gordon Bay appear to have an orientation parallel to the general trend of the coastline which is south-east to north-west. Near Lake Harbour, the trend assumes a general north-south direction, but this could be local only. The entire complex is highly faulted and jointed but has been free from major tectonic movements at least since Ordovician time because the limestone strata of that period are undisturbed. These limestones dip gently to the west into Foxe Basin.

Two relatively large synclinal structures are noted in the area. One of these is situated north-east of Chorkbak Inlet and includes iron formation. The second lies to the east of Tessialukjuak Lake near Lake Harbour. The latter syncline measures nearly six miles across the limbs at its western end.

The rocks of the Precambrian complex are predominantly gneisses and schists of great variety, and crystalline limestone. There are, as well, some granitic masses which may or may not be intrusive. In the vicinity of Lake Harbour there are numerous small ultrabasic intrusives; especially of Dunite. Several other periods of intrusive activity are evidenced by the development of dykes throughout the area; some near Markham Bay, are of considerable length. Medium grained pegmatite dykes outcrop on the south side of Dorset Island, and Gabbro dykes also are found at various locations in the area.

The crystalline limestone is the most conspicuous unit on the assemblage and its white weathering characteristics have been noted by every observer. It is exceptionally massive and appears to be very resistant to pronounced shattering by frost action, while most other rocks are badly shattered.

The gneisses, due to their extensive variety, are difficult to distinguish and divide into distinct units. The range of these is shown in the legend of the companion map and is largely that arrived at by Blackadar in Memoir 345 (G.S.C. 1967). Granitic masses give rise to a question of origin as noted by Blackadar who observed that they lack the characteristic of intrusives in their contacts, which are not sharply defined. Instead, the mass appears to grade almost imperceptably into highly developed gneissic structure.

As already noted, schistose rocks are abundant and occur in great variety. They are deeply weathered and decomposed, and are completely friable. The most conspicuous of the schists weather to a reddish brown colour and, at a distance, are easily confused with dunite which weathers to the same colour. These appear conformable with the crystalline limestone wherever they are in contact.

Ultrabasic intrusives are found frequently in the vicinity of Lake Harbour in the form of Dunite. These rocks are highly altered and in all cases display varying degrees of serpentinization. In places they are intruded into the crystalline limestone so are assumed to be younger than that formation. Minute stringers of asbestos can be seen in some exposures while others are completely altered to serpentine and are very massive.

SURFICIAL GEOLOGY

Most unconsolidated material found in the region falls into three general categories by origin, i.e., glacial, residual and lacustrine. The bulk of the mantle is composed of glacial debris and ranges from sand through clays and gravels to very coarse boulder-till. Eskers can be seen inland and are easily distinguishable from the air. Morainic material is responsible for the damming of numerous lakes but, on the whole, moraines are poorly developed.

Residual deposits appear confined to those areas in which the more friable or easily decomposed rocks occur. They can be found overlying certain of the schists, and also the crystalline limestones where they occupy topographic lows. The deposits are usually coarse and frequently covered by a thin layer of humus. Some of the beds attain a thickness of up to two feet over the parent rock.

The lower part of the valley of the Soper River shows a shallow flood-plain development consisting mostly of sand but with a good development of interbedded clays higher up the valley. These deposits overlie a

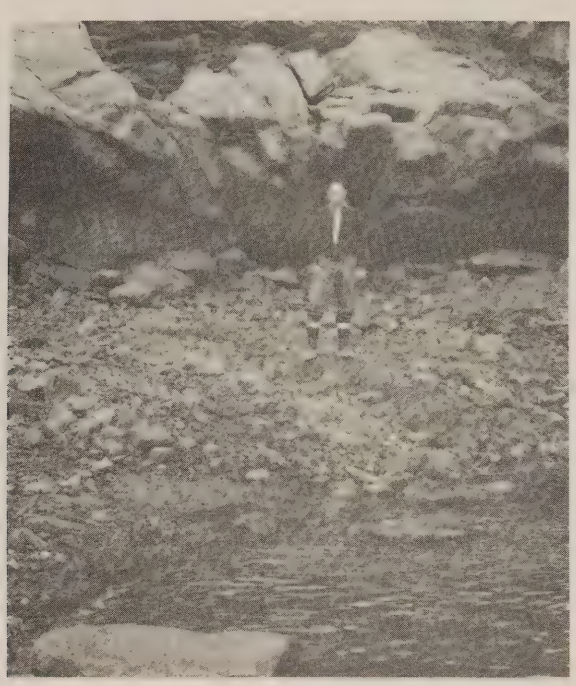


PLATE II - Contact between serpentinized dunite, granite gneisses and rusty schists. Vicinity of Lake Harbour.

boulder till which is evident along the shoreline. Minor terraces can be seen in places.

Most granular, unconsolidated material is overlain by a mantle of muck of varying thickness covered by mosses and grasses. Its water retention qualities are usually excellent.

ECONOMIC GEOLOGY

The area has never been systematically prospected in terms of its full mineral potential. This is due chiefly to the unfavourable economic conditions attached to mining at the present time in surroundings as remote and inhospitable as those peculiar to the south coast of the island. Later, perhaps, the economic climate will be right for the development of exploration and mining on contemporary scales. In this context, mining development should be considered as a long-term proposition.

This study is concerned, however, with short-term as well as long-term considerations, both relative to the economic predicament of the Eskimo. In this sense all minerals cannot be readily cast aside for future consideration. Certain of them lend themselves rather well to very small

mining operations, the products of which could appreciably augment the cash income of local Eskimos. Of the mineral occurrences seen so far, two fall into a category which warrants further investigation and are the subject of recommendations offered by this report.

MINING AND EXPLORATION ACTIVITY

Mining activity proper likely began with Martin Frobisher, reputed to have taken a quantity of pyrite to England from somewhere near the shoreline of Frobisher Bay. In the survey area itself, the first reliable indication of mining is contained in the report of A.P. Lowe, (1903-04:252) in which he mentions that the Scotch whaling vessel "Active" obtained mica from a mine worked on the north side of Hudson Strait as early as 1898. The location of the mine is thought to have been near the present site of Lake Harbour.

The Hudson's Bay Company commenced mining mica near Lake Harbour in the 1930's and it is believed that they attempted the mining of garnet and graphite as well. Some 300 mining claims were staked in the area in the late 1920's. The mining records for that period do not indicate the ownership of these but it is reasonable to assume that they were staked and registered by the company. The company ceased mining operations about 1935 and the claims have lapsed. These, along with others, are shown in Map 5.

The Eskimos have been extracting small amounts of serpentine for many years for the making of lamps and for use in carving. This, in a sense, can be termed a mining activity and, as such, ante-dates all other mining in the area.

In 1957, Ultra-Shawkey Mines Ltd. carried out exploration work on iron formation near Chorkbak Inlet, 100 miles east of Cape Dorset. The company staked 505 mining claims or approximately 40 square miles. A sizable party was placed in the field and bulk samples were removed for metallurgical testing. Many millions of tons of ore grading about 30 per cent iron were postulated but it is supposed that generally the grade was too low because work was suspended in 1958 following a small drilling program and the claims have since lapsed. Recommendations called for an examination of certain sulphide zones containing nickel and copper north of Amadjuak, but it appears that this was not done.

In the same year, a group known as Trans-World Mining & Exploration Ltd. placed a party in the valley of the Soper River to stake a group of claims over a mineral deposit, supposedly azurite, a copper carbonate. The mineral proved to be lazurite and the venture collapsed amid a great deal of difficulty over monies owing the Eskimos who served as field assistants.

For several years a company named Consolidated Morrison has been active in exploration work within and without the survey area. The company has been actively searching for radio-active minerals employing an airborne scintillometer. Interesting areas receive a more detailed investigation using ground instruments. It has not so far staked any mining claims in the survey area, but in 1967 it staked a substantial part of the north-west side of Frobisher Bay. The company has proved

the most persistent in its exploration so far.

MINERAL OCCURRENCES

Iron

Iron has been mentioned in the coastal region near Chorbak Inlet and the reader is referred to G.S.C.Memoir 345, 1967, for a complete description of the occurrences.

Serpentine

The mineral is plentiful and constitutes a non-renewable resource of considerable importance to the Eskimo economy as a carving stone. The mineral is always referred to as "soapstone" but the latter has not so far been found in the area. That which does find its way there is generally imported from the south during periods of scarcity of serpentine.

The mineral occurs chiefly as an alteration product of olivine-rich ultrabasic rocks. Officers of the G.S.C. prepared and examined thin sections made from a number of specimens obtained by the survey from several occurrences. The results show that the occurrences range from serpentinized dunite to pure serpentine with no traces of chromite or secondary magnetite. The serpentinized dunite is mostly dark grey to black and the purer serpentine is solid to variegated green in colour. Both have more or less "soft" phases within them and it is these that the Eskimo extracts.

Ultrabasic intrusive bodies are numerous in the vicinity of Lake Harbour, but are for the most part small in size and virtually impossible to map on conventional reconnaissance scales. It can be found intruding the crystalline limestone near the site of Lake Harbour, and at McKellar Bay where it is overlain by gneisses. At both sites, the masses are completely altered to serpentine. Where alteration is not so advanced, as at some locations, minute stringers of asbestos can be seen.

The Eskimos of Lake Harbour, and to a lesser extent those of Apex, have been mining serpentine at McKellar Bay where they have created a chamber measuring about twelve feet in depth and six feet in width, with a floor to ceiling clearance averaging roughly five feet. This would indicate the removal of some forty tons of mineral over the years. The length of the exposure is several hundred feet, but it probably outcrops elsewhere along strike. The strike is that of the local gneisses, nearly north-south with the dip westerly at 30 degrees.

There appear to be no reliable structural criteria peculiar to the occurrence of dunite and resultant serpentine that would serve as an aid in prospecting. Two of the exposures, however, are located high on the limbs of moderately plunging anticlinal structures of which the crystalline limestone is the upper member. It is not known whether this could be applied to similar structures and indicative of the presence of serpentine. In the absence of large-scale photography, criteria would have to be established by trial and error on the ground. If favourable, then existing small-scale photographs could be used for the location of these structures.

PLATE III - Mining operations at McKellar Bay. The rock is a massive serpentine. Mining began in 1958.

Mica

Mica occurs in the survey area as muscovite and phlogopite. The former, if of suitable quality and size, has economic potential for the Eskimo.

There are some nine occurrences on which a limited amount of trenching was carried out in previous years. Additional ones could be turned up with little difficulty. A specimen taken from an exposure near the Soper River was identified by officers of the Mines Branch as muscovite. A similar showing was uncovered by the survey approximately one mile along the strike. The latter was concealed by about twenty inches of residual soil containing small flakes of mica. On removing this cover, crystals up to eight inches in diameter could be seen.

The first showing contained crystals with diameters of up to twenty inches but all had inclusions of pyrite. This could be a characteristic of the deposit margin and may disappear away from the contacts. There was much decomposition of material about the showing but some coarse feldspars were found near the contact with crystalline limestone making it probable that the mica occurred in a pegmatite. The second showing had clear crystals entirely free from inclusions of any kind.

The occurrences close to the settlement occur in a schistose rock which could be a highly altered volcanic variety. The mica appears to be phlogopite and would not, therefore, be of much interest. Other showings of muscovite are known along the coast as far west as the old Amadjuak site so it is reasonable to assume that interesting deposits might be uncovered by prospecting.

PLATE IV - Muscovite occurrence near the Soper River. Most crystals observed had inclusions of pyrite.

Lazurite

Lazurite occurs in the valley of the Soper River and is restricted to a formation composed predominantly of diopside. The strike of the formation is roughly north-south and it appears to form the west limb of a small, anticlinal structure. Some samples were procured by the survey but these were obtained from a surface exposed to weathering and cannot be classed as typical of the quality that may be obtained from fresh surfaces. The mineral could have useful application if the Eskimos decide to engage in lapidary work in connection with the manufacture of costume jewellery or the preparation of bases for carvings.

Graphite

This mineral is exceptionally plentiful and is the principal constituent mineral of some schists to the extent that it comprises a substantial percentage of their bulk. It occurs elsewhere in concentrations filling fissures in the crystalline limestone from where it can be removed in lumps. One such showing is located on a hill overlooking Lake Harbour where the limestone is in contact with quartzites and schists. It is not thought to be of any economic value to the local Eskimos.

Garnet

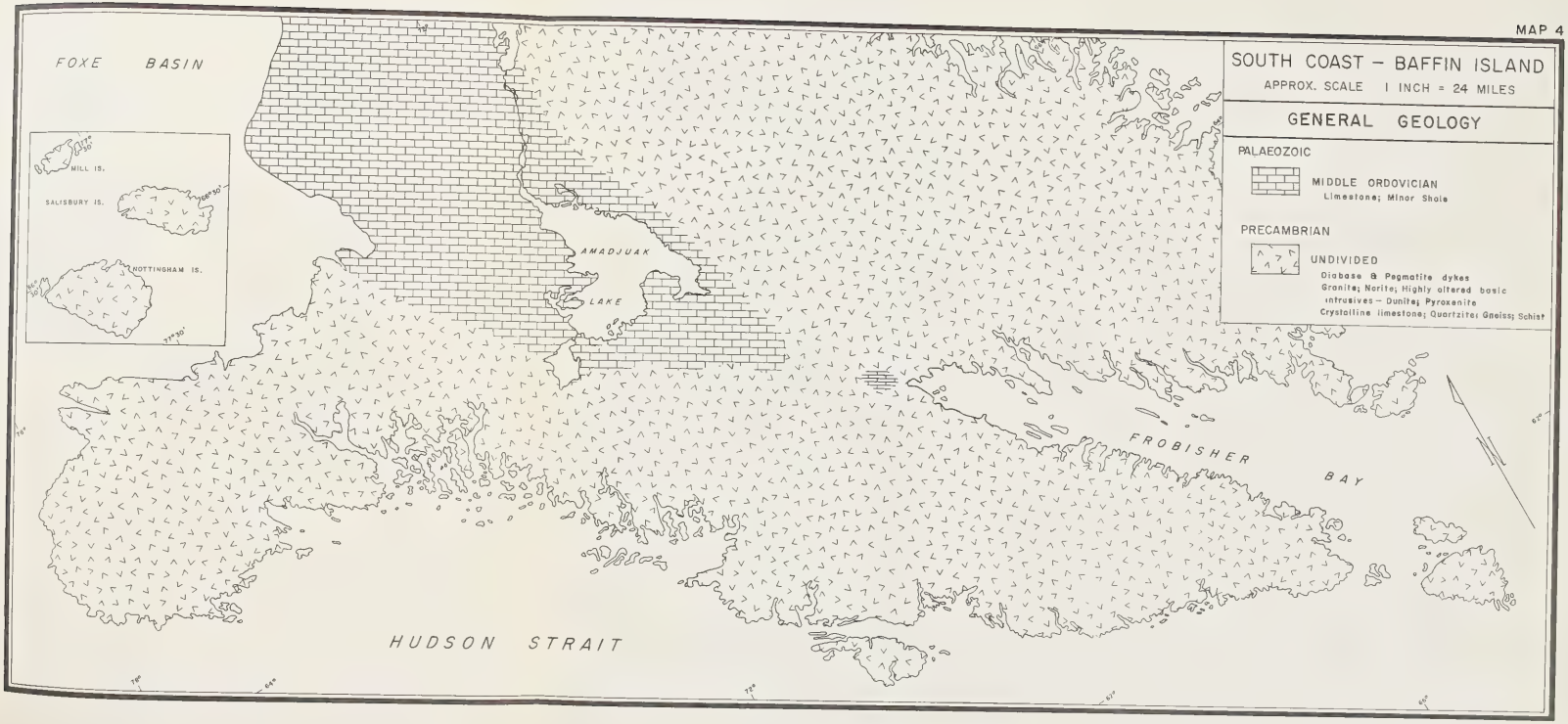
Garnet is rather plentiful in the area as a constuent mineral of some gneisses and schists. It was used extensively as an abrasive in earlier years but has come into disuse through the introduction of synthetic materials.

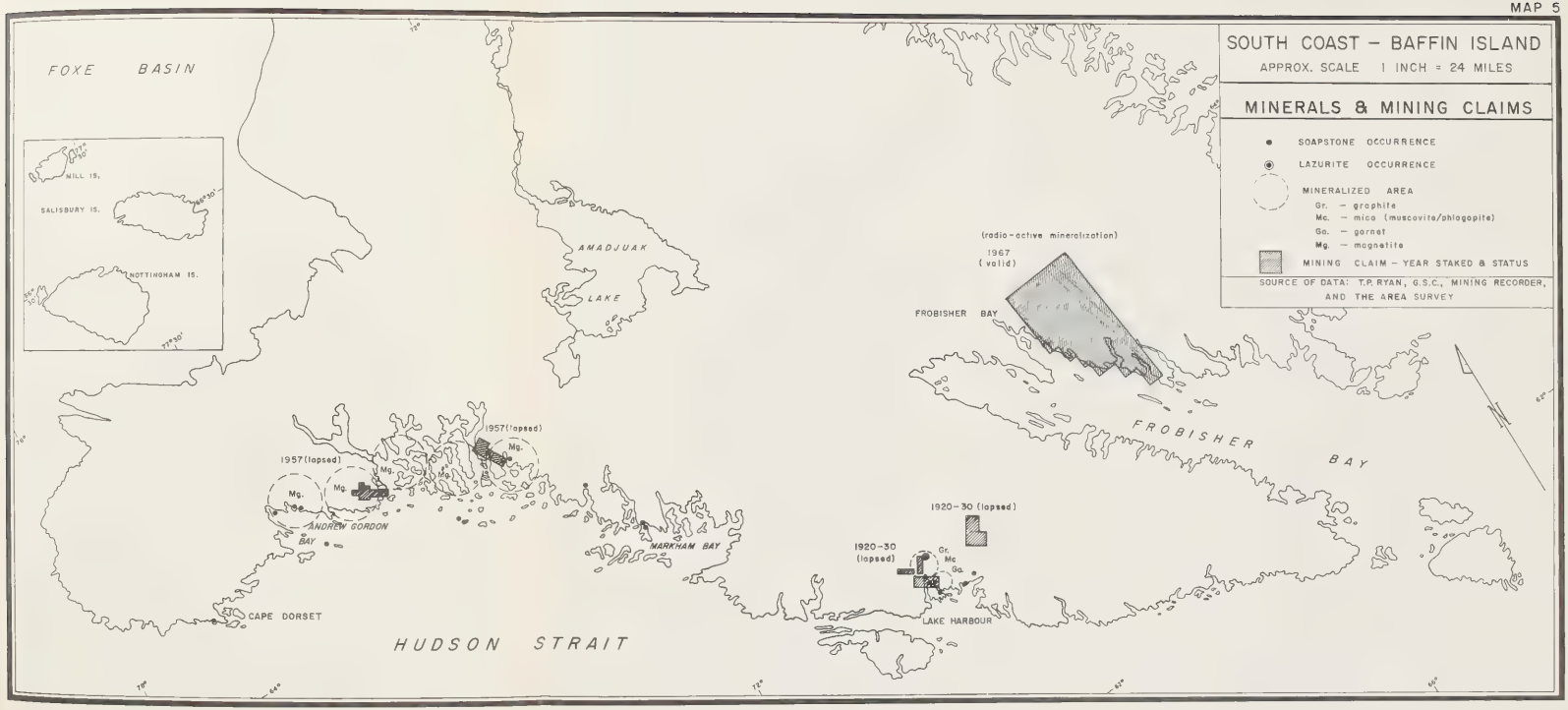
Copper Sulphides

Sulphides are known in the area but no information is available on the occurrences seen so far. In addition, it is not known what plans the G.S.C. may have for future work in the south of Baffin Island. Their plans include reconnaissance geological mapping in the north of the island and airborne magnetometer surveys of the central part are in the process of being compiled. It is hoped that the latter type of survey might be extended to include the southern part of the island so that the geological structure can be better understood.

Asbestos

Minute stringers of this mineral were seen in some of the Dunites in the vicinity of Lake Harbour and may be of interest at some future date. Large masses of the host rock were not seen in the area but if the program of airborne magnetometry presently being carried out by the G.S.C. is extended to the south coast, it is possible that large masses may be detected.


FOXE BASIN
MILL IS.
SALISBURY IS.
NOTTINGHAM IS.
AMADJUAK LAKE
FROBISHER BAY
HUDSON STRAIT
SOUTH COAST – BAFFIN ISLAND
APPROX. SCALE 1 INCH = 24 MILES
GENERAL GEOLOGY
PALAEOZOIC
MIDDLE ORDOVICIAN
Limestone; Minor Shale
PRECAMBRIAN
UNDIVIDED
Diabase & Pegmatite dykes
Granite; Norite; Highly altered basic intrusives – Dunite; Pyroxenite
Crystalline limestone; Quartzite; Gneiss; Schist


SOUTH COAST – BAFFIN ISLAND
APPROX. SCALE 1 INCH = 24 MILES
MINERALS & MINING CLAIMS
SOAPSTONE OCCURRENCE
LAZURITE OCCURRENCE
MINERALIZED AREA
Gr. – graphite
Mc. – mica (muscovite/phlogopite)
Go. – garnet
Mg. – magnetite
MINING CLAIM – YEAR STAKED & STATUS
SOURCE OF DATA: T.P. RYAN, G.S.C., MINING RECORDER, AND THE AREA SURVEY
FOXE BASIN
MILL IS.
SALISBURY IS.
NOTTINGHAM IS.
AMADJUAK LAKE
(radio-active mineralization)
1967 (valid)
FROBISHER BAY
1957 (lapsed)
Mg.
ANDREW GORDON BAY
MARKHAM BAY
1920–30 (lapsed)
Gr.
Mc
Go.
LAKE HARBOUR
CAPE DORSET
HUDSON STRAIT

CHAPTER 3

CLIMATE

Weather reporting stations are widely separated in the Arctic and only two are located in the survey area; these are at Nottingham Island situated about eighty miles south-east of Cape Dorset, and at Resolution Island at the entrance to Frobisher Bay. Two others are pertinent to a continuing appraisal of climatic conditions in the area and these are at Frobisher Bay and Coral Harbour.

According to H.A. Thompson,* the groundwork for a better understanding of the Arctic climate was laid just prior to 1930 by the establishment of certain weather stations on Baffin Island and elsewhere on the Arctic coast. Their present density, however, is not yet sufficient to permit regional climatic divisions to be made for the purpose of comparison.

The area is exposed to a continental-type climate for the greater part of the year. Modifying influences are exerted on the climate by the expanse of open water in the Hudson Strait at different times of the year.

THE SEASONS

Broadly speaking, the seasons of spring, summer, fall and winter do not find the same application in the Arctic Archipelago that they do in southern latitudes. Most of the phenomena by which these seasons are distinguished in the south are either missing or are severely diminished in the survey area.

The winter, in terms of its duration, coincides reasonably with the seasons autumn, winter and spring in the south and is characterized by a span of nearly eight months during which temperatures are consistently below freezing; the ground, for the most part, is covered with snow; fast-ice extends several miles seaward, and the hours of sunlight are reduced. Travel on snow or ice is possible throughout the season.

The summer season is restricted to those remaining months when travel over open water is permissable. The period is characterized by the absence of fast-ice; temperatures are generally above freezing; snow is absent except in gullies and on slopes where it lies protected from the sun and the hours of darkness are greatly reduced.

The two seasons are clearly separated by an aggregate period of roughly four weeks when ice conditions are in the transition stages referred to as break-up and freeze-up. Travel by most conventional means is virtually impossible during these transition stages, and in a very real sense the commencement and termination of the seasons can be related directly to the presence or absence of fast-ice along the coast.

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* The Climate of the Canadian Arctic, D.O.T., 1965

TEMPERATURE

During the winter season the temperature gradient rises from the Foxe Peninsula toward Resolution Island in the south-east. In the summer season, a rise in the opposite direction is apparent. At Nottingham the average daily temperature for the eight winter months - October through May - is 6.2 degrees F, while at Resolution it is 13.9 degrees F. The average mean daily temperature for the period June through September is 39.5 and at Resolution 36.1 degrees. This gradient is most apparent in the climatic data shown in Figures 2 & 5, but on the isotherm charts it is apparent only in the month of July.

PRECIPITATION

There is little difference in the total annual precipitation as recorded at both stations. The water content of total precipitation, i.e., rainfall plus one-tenth of snowfall, at Nottingham 11.79 inches for the ten-year period of the tables, 1951-1960. At Resolution for the same period the amount is 11.46 inches.

Snowfall in the area is much less than recorded at more southerly points in the country, but the frequency of blowing snow is considerably greater. According to W.C. Fraser*, the time frequency of blowing snow at the Nottingham station averages approximately 8 per cent for the months October through April, with the peak frequency of 12 per cent occurring in the period December through February. Similar studies were not carried out at the Resolution station or elsewhere in the area.

WINDS

The most prevalent direction of winds varies from the north-west to the south-east extremities of the survey area. The persistent directions recorded at Nottingham are NW & NE, while at Resolution they are W & E. In the coastal region separating these two stations, however, there is considerable variation in wind direction and velocity due to topographic change. The winds, in combination with tides and currents, exert a great influence on the condition and movement of ice an the area, about which more is said in the section on ice conditions.

CLOUD & FOG

The build up of stratus cloud in the area is characterized by a low base, frequently less than 2,000 feet, and a thickness generally of 2,000 feet or less. There is an absence of the vertical development encountered in southern latitudes. Cloudiness increases with open water conditions,

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* A Study of Winds and Blowing Snow in the Canadian Arctic, Meteorological Branch, D.O.T., 1964.

particularly in the Hudson Strait. The months from April through September provide the period of greatest cloudiness for the larger part of the area, but there are differences toward Resolution Island.

In general, the period mentioned above coincides with the time of increased fogginess, which is a characteristic of that part of the coast situated between Chorbak Inlet and Markham Bay. It is, in fact, so characteristic of that sector that the Eskimo inhabitants in earlier time were known by the name "Tassiltugmiut", which when translated means "people of the fog".

This sector of the coast could be defined as fog belt which extends a considerable distance inland and is bounded on either side by the locations mentioned. Fog does, of course, occur everywhere along the coast but its frequency is greatest in the location mentioned. It is this combination of low stratus cloud and fog that imposes the severe limitations on aircraft using VFR, alluded to under air transport in the chapter on communication systems.

TIDES

Tides rise from the south-east to the north-west in the Hudson Strait which creates a time difference in tides of just over three hours between Resolution Island and Cape Dorset. The tidal range in the Hudson Strait is the greatest in the Canadian Arctic and is, as well, among the highest in the world. In the vicinity of Lake Harbour tides rise as high as 35 feet and generally decrease in height in the direction of the Foxe Peninsula where they drop off to 20 feet and less.

Exceptionally strong tidal currents are produced locally throughout the area but the strongest witnessed are in the vicinity of Cape Dorset where, due probably to the configuration of the sea bottom and the arrangement of the larger islands, there is much fast movement of sea water. It is not uncommon to see small bergs transported in a circular motion within a mile of the coast. It was largely due to these strong tidal currents that the vessel "Nascopie" was ultimately driven stern-first onto a reef close to Dorset Island where it later sank.

Barrier beaches or saddles connect the larger islands about Cape Dorset and are exposed at low tide. Those channels which open to the south-east, in the direction from which the tide rises, experience a build up of water in front of the barriers. This eventually spills over in a torrent into the opposite channel whose opening to the sea is so orientated that it causes a time differential between the tidal rise in each of them. Constricted channels also give rise to swift moving currents when the rising volume of water cannot find adequate passage. Both conditions can be hazardous to canoe travel due to the large volumes of water in motion.

The great tidal range in the area causes many difficulties to the unloading and loading of ship's cargo which has to be accomplished by lighter. It would be extremely difficult and costly to build port facilities at any point on the coast.

PLATE V - A view of the Nascopie on a reef, July 1947, Dorset Island. Courtesy of R.B. Tinling.

OCEAN CURRENTS

The principal current in the waters bounding the survey area is the Canadian Current which moves south-easterly in the Hudson Strait to where it joins the Labrador Current south and east of Resolution Island.

A coastal current branches from the southerly flow in the Davis Strait, passes around Resolution Island and travels almost to Dorset Island where it swings south and merges with the Canadian Current. This coastal current is responsible for transporting the icebergs that are occasionally seen travelling north-westerly just off the south coast.

A major cyclonic flow occurs in the Foxe Basin and part of it branches off and travels south-easterly through the Foxe Channel where it merges with the Canadian Current after passing Nottingham and Salisbury Islands. The Foxe Current is responsible for the movement of most of the pack ice into the Hudson Strait from the Foxe Basin where there are extensive accumulations. Superimposed on the ocean currents are the local tidal currents discussed under tides.

ICE CONDITIONS

Sea and fresh water ice conditions are significant to everybody in the Arctic. By far the most important is the sea ice and, in turn, the most important formation of sea ice is fast-ice. It is the latter which provides the surface for travel during the greater part of each year.

While being so useful, sea ice is at the same time a formidable barrier to major communication systems and, therefore, to area development. Shipping is the system most severely limited by ice and because of it the safe season along the south coast is barely three months in duration.

Sea Ice

The two significant events relating to sea ice conditions are those of "break-up" and "freeze-up". As mentioned before, for all practical purposes these two events divide the year into two seasons rather than four.

For about seven months of the year fast-ice conditions prevail along the south coast of Baffin Island. The fast-ice sheet extends from the land to which it is attached, seaward to a distance that varies with the configuration of the shoreline. Generally, the seaward edge of the fast-ice is anchored to chains of off-shore islands in the area and extends inward to the mainland. The breadth of the fast-ice sheet, if measured to the heads of the larger bays from the seaward edge, is extensive. The fast-ice in Andrew Gordon Bay in June of 1967, for example, measured approximately 30 miles from the head of the bay to the fast-ice edge. Where the shoreline was somewhat more regular, the edge was distant anywhere from seven to ten miles. By May, however, erosion of the seaward edge of the sheet is already advanced so it may have extended one or two miles beyond during earlier months.

Along the mainland shore and the periphery of each island is a belt of rough ice of varying width produced by the action of tides on the fast-ice. The rough-ice allows vertical adjustment of the sheet to the rise and fall of the tide and is composed of ice blocks displaying all manners of orientation. The rough-ice completely obliterates the true shoreline which complicates visual navigation from both the ground and the air. This belt must eventually be traversed by anyone wishing to move from the fast-ice to the land.

About the second week in June considerable water gathers on the ice surface which itself turns dark in colour. Shore leads begin to open and are accompanied by an accelerated erosion of the sheet at its seaward edge. Open water usually predominates about mid-July with minor amounts of pack-ice present.

Large expanses of pack-ice are present in the Foxe Channel and Hudson Strait from April through July. Depending upon winds and tides, the floe-edge can be on the horizon or in contact with the fast-ice. During much of June 1967 the pack-ice was held firmly against the fast-ice forming an impassable barrier.

PLATE VI - View of the rough-ice taken from the approximate shoreline

PLATE VII - This photograph shows the condition of the fast-ice at the end of June about three miles seaward of Cape Dorset. The ice has assumed a dark colour and considerable water is present on its surface.

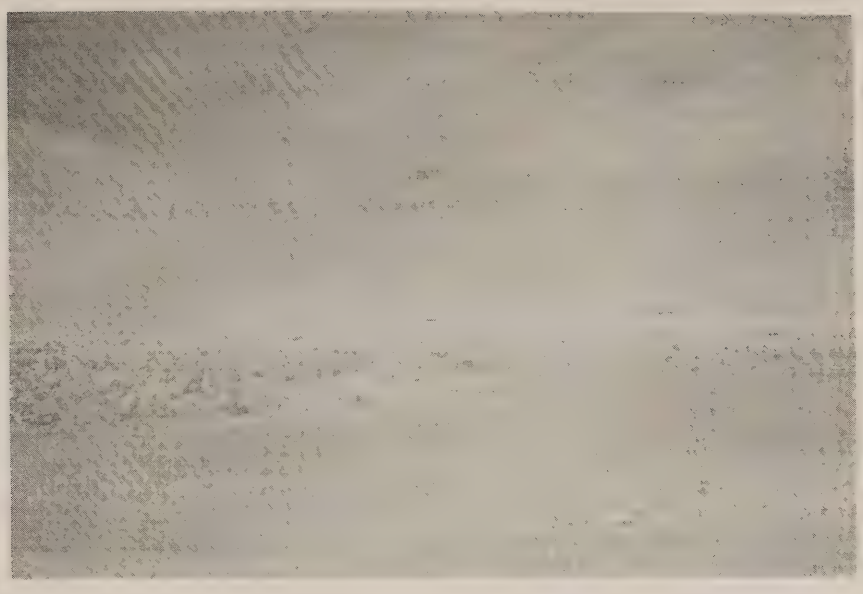


PLATE VIII - Looking south into the Hudson Strait from a hill-top just west of Chorbak Inlet. The floe and fast-ice edges are distant nearly one mile.

In some years broken fast-ice which normally contributes to the ice-pack of the Strait is held along the shore by unfavourable winds well into the summer season. This occurred in the summer of 1967 when most of the coastline from Cape Dorset to Chorbak Inlet was clogged with free-ice making it very difficult for travel even by canoe despite its great manoeuverability. Once past the Inlet the coastline was virtually free of ice. This condition prevailed until late in August.

PLATE IX - Newly broken fast-ice held inshore by wind near Dorset Island

Freeze-up will vary from year to year, like ice conditions generally, but it usually commences about mid-October and advances quite rapidly thereafter. It progresses from all shorelines and safe travel on it is usually possible by or before mid-November. Aircraft landings have been accomplished in the latter half of that month but, as a rule, occur in the first or second weeks of December.

Some break-up and freeze-up dates are given below. These are too few to be really indicative but information relevant to earlier years was not available. The dates are for Cape Dorset only.

Year	Break-up	Freeze-up
1965	-	12 November
1966	29 June	23 November
1967	8 July	-

Source: R.C.M.P., Cape Dorset, and The Area Survey

Fresh Water Ice

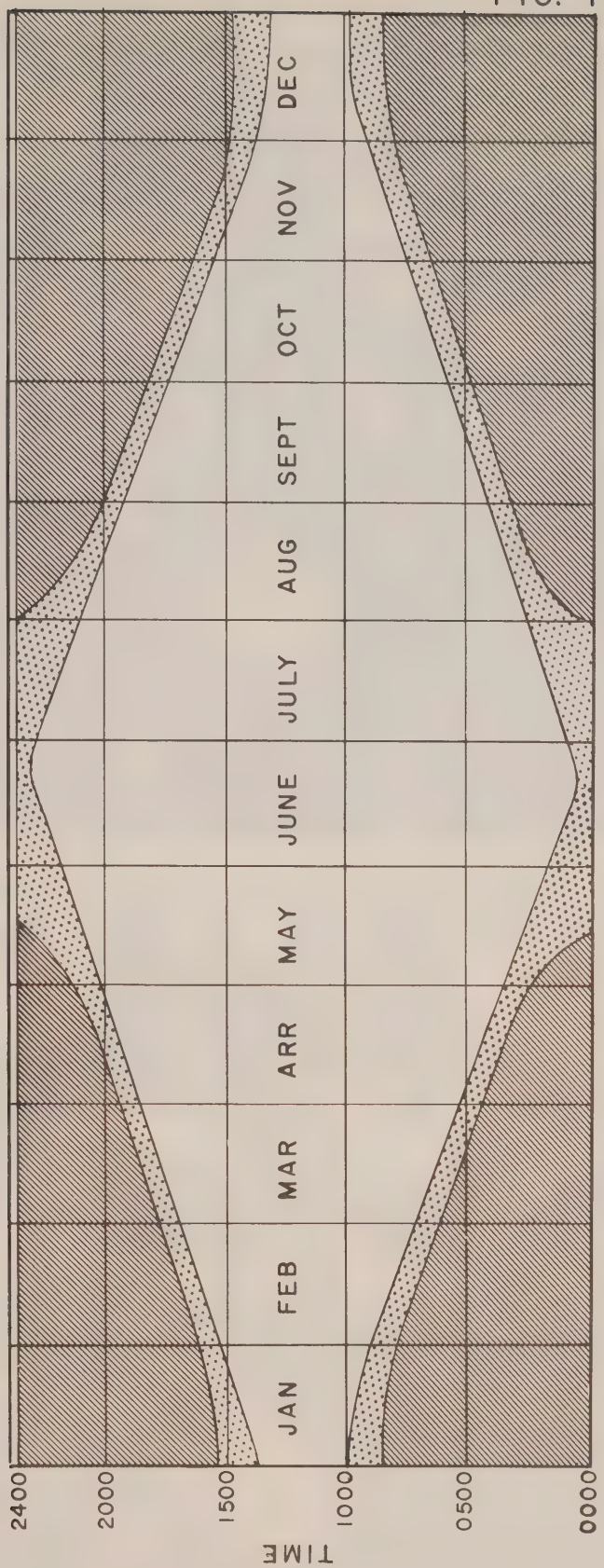
The ice conditions in lakes and rivers, although not as important to the activities of the Eskimo as sea-ice, do influence travel habits. The fresh water bodies naturally freeze earlier than those having some measure of salinity, and the fresh water ice deteriorates more quickly than sea-ice, especially along shore lines. Very often, however, a large segment of ice can be found shifting back and forth in the lakes as late as August.

Lake and river ice begin to deteriorate about the third week in May and considerable water can be found flowing on the ice surface in the rivers. By the end of the month travel is all but hopeless on the fresh water ice and this creates a great hardship to overland travel which must be curtailed even though much snow may be present. Lakes and rivers usually provide the least arduous overland routes and most are generally sufficiently frozen to permit travel by about mid-October.

DAYLIGHT, TWILIGHT & DARKNESS

Little data of use can be added to Figure 1 which pertains to this subject. The category of twilight depicted in the figure is "Civil Twilight" which is considered the most useful for navigation and other purposes. It encompasses the time when the sun is between the horizon and 6 degrees below it. The condition is observed at sea level with a clear horizon.

FIG. 1



Source: Arctic Air Navigation, Defense Research Board

FIGURE 2

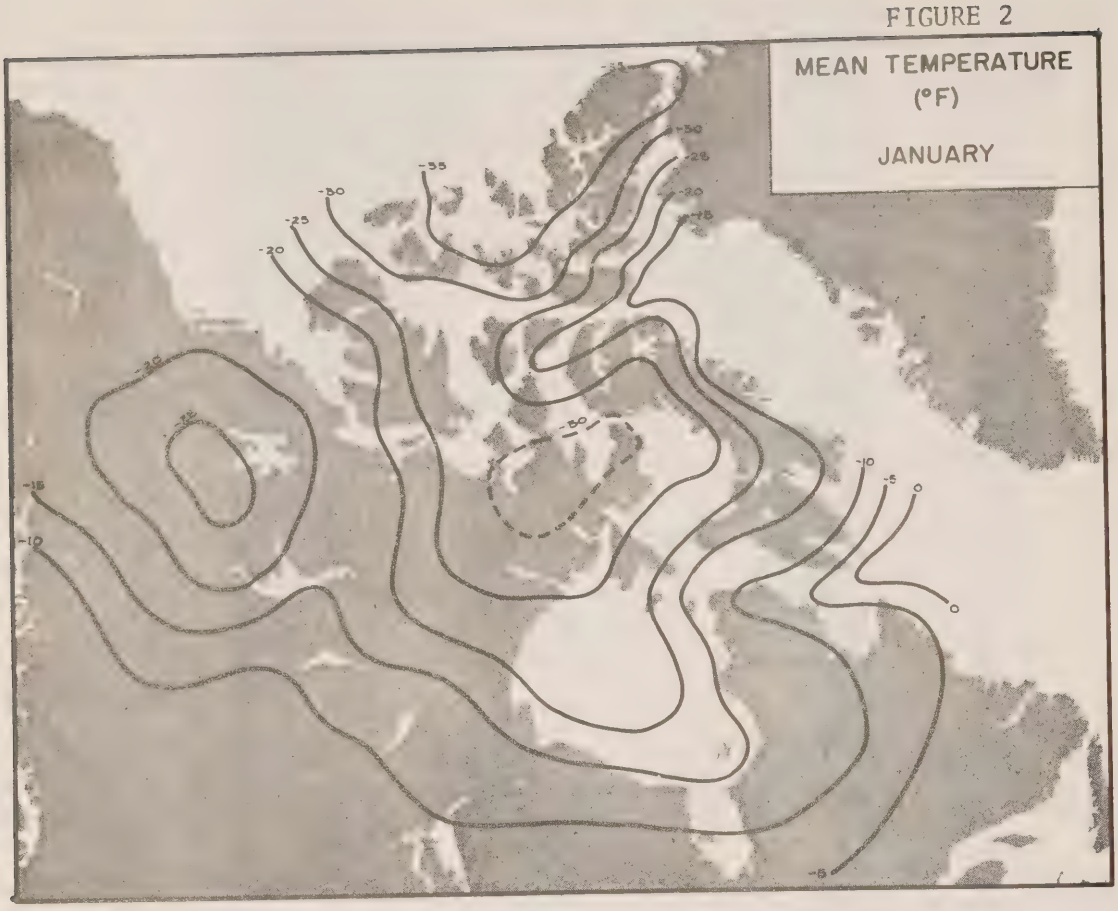
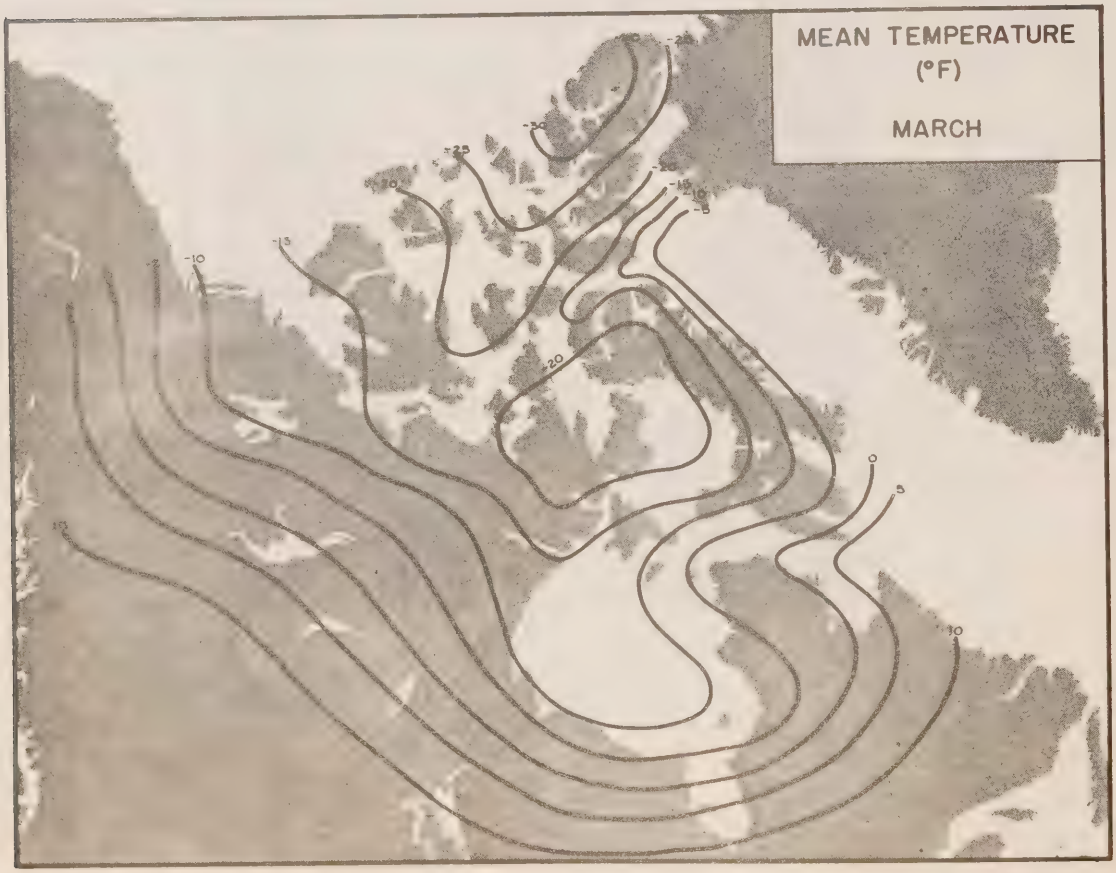


FIGURE 3



Source: Climate of the Canadian Arctic Archipelago, D.O.T., 1951

FIGURE 4

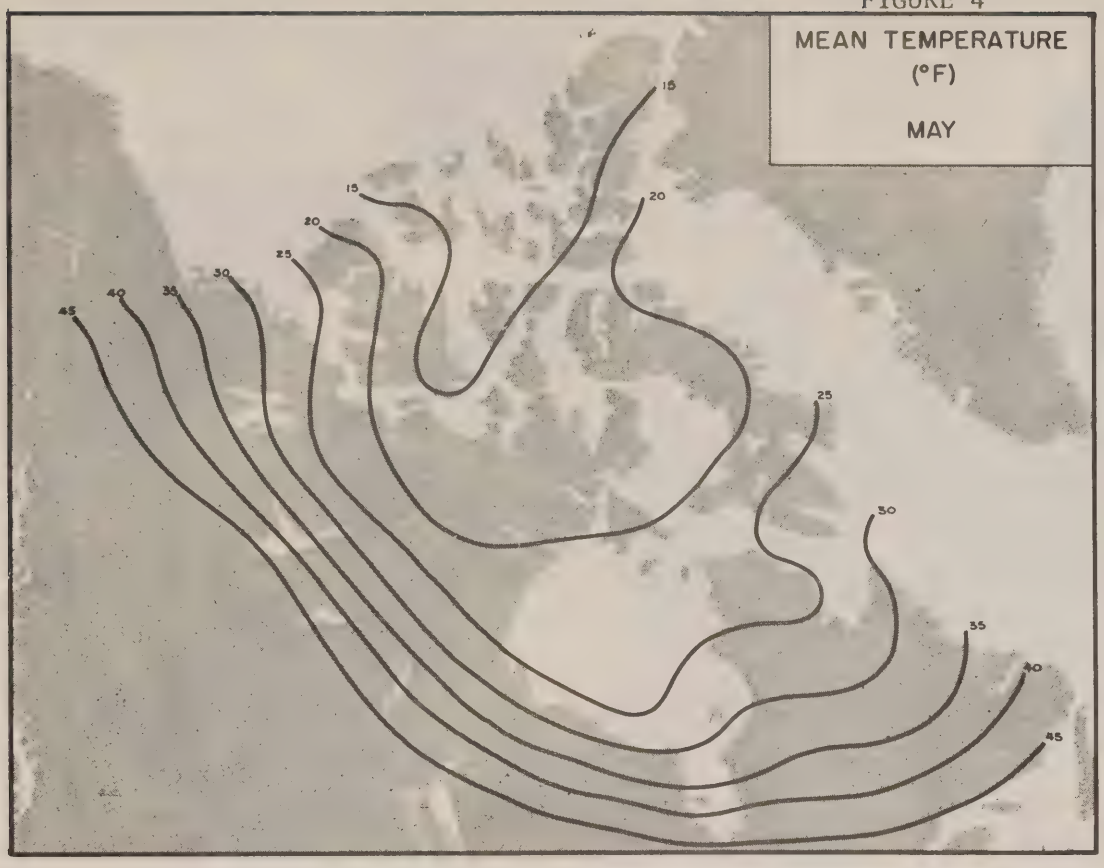
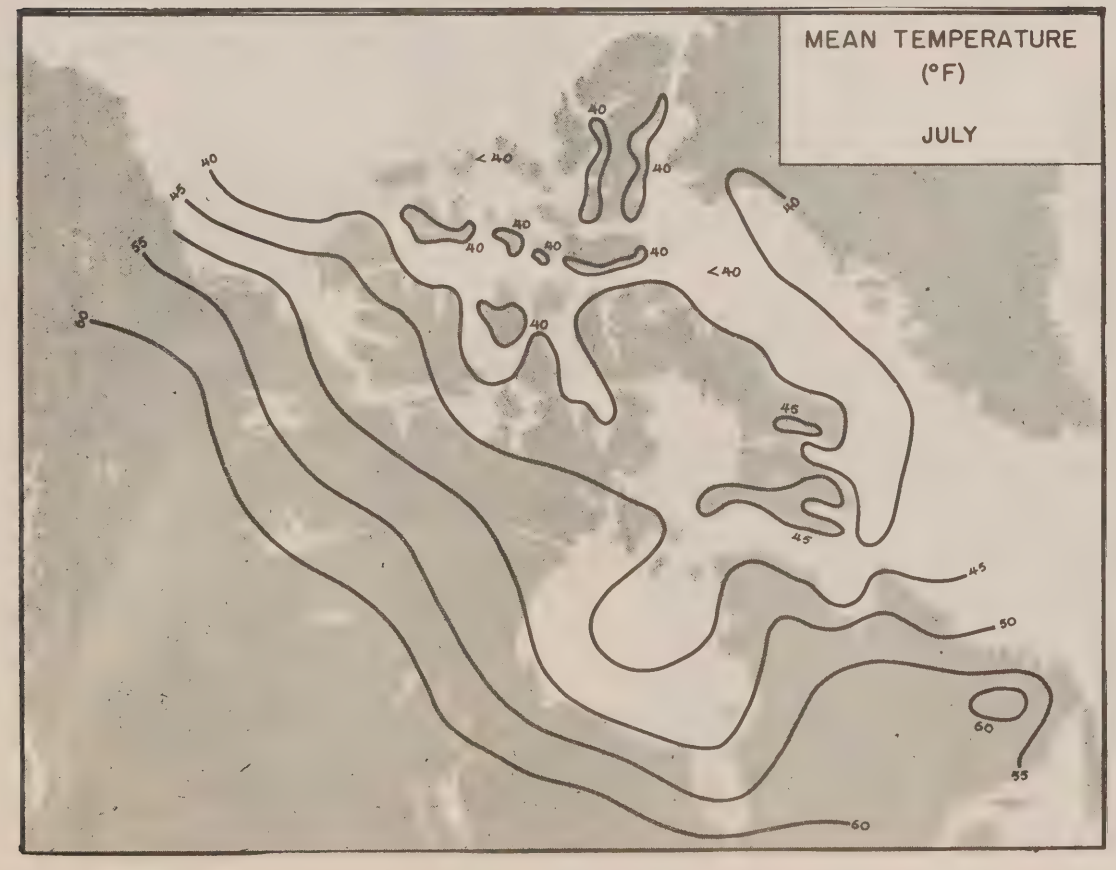


FIGURE 5



Source: Climate of the Canadian Arctic Archipelago, D.O.T., 1951

FIGURE 6

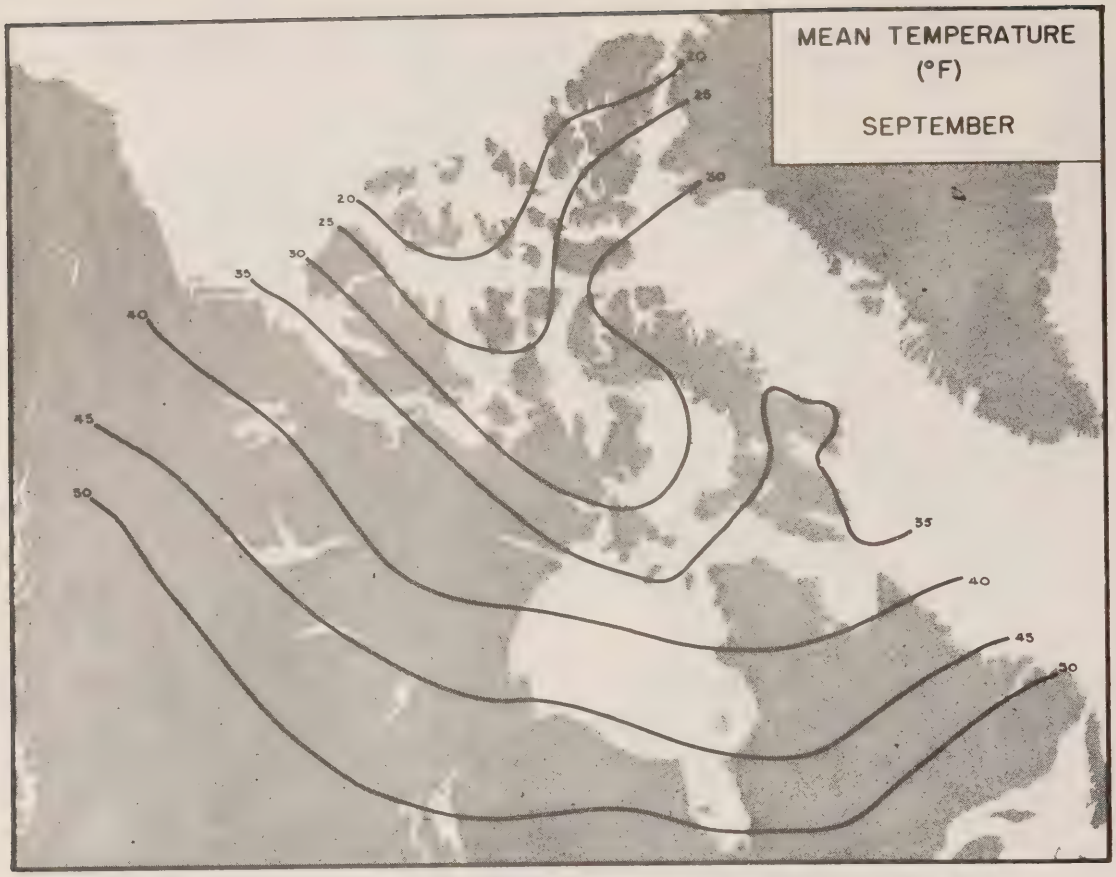
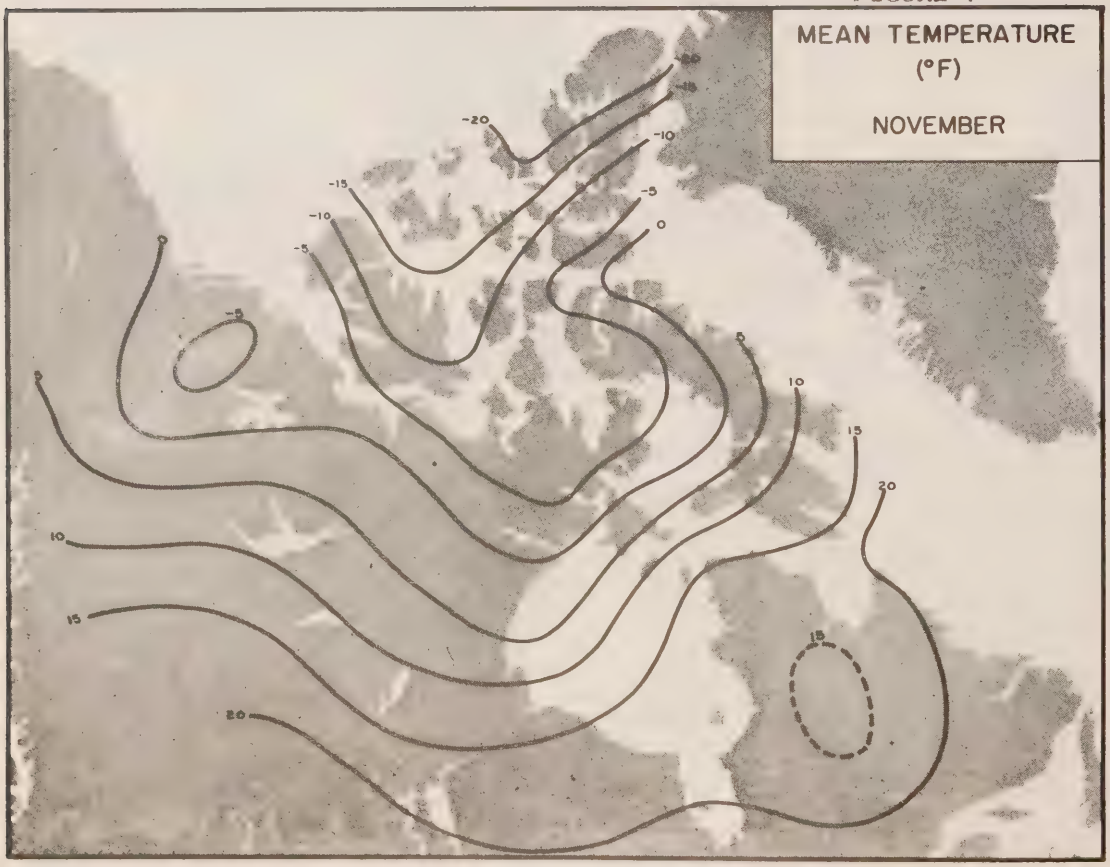


FIGURE 7



Source: Climate of the Canadian Arctic Archipelago, D.O.T., 1951

AVERAGES AND EXTREMES OF CLIMATIC DATA

STATION Nottingham Island LAT 63° 07'N LONG 77° 56'W ALTITUDE ABOVE M.S.L. 54 Ft.

	AIR TEMPERATURE							PERCENTAGE FREQUENCY OF DAYS WITH MINIMUM TEMPERATURES AT or BELOW					Mean Cloud Amount 10ths of Sky Covered
	Mean Daily	Mean of Daily Maximum	Mean of Daily Minimum	Mean of Monthly Maximum	Mean of Monthly Minimum	Highest Recorded	Lowest Recorded	-10°F	-20°F	-30°F	-40°F	-50°F	
	°F	°F	°F	°F	°F	°F	°F						
January	-11.9	- 5.8	-18.0	17	-33	32	-38						4.5
February	-10.5	- 3.9	-17.1	19	-33	32	-42						4.6
March	- 2.3	5.4	-10.0	25	-28	34	-40						4.3
April	11.3	19.0	3.6	34	-15	43	-26						5.3
May	26.0	31.3	20.7	40	3	47	- 8						7.9
June	36.4	42.1	30.6	55	23	65	10						7.1
July	43.3	50.2	36.4	61	31	73	25						6.1
August	43.2	49.2	37.1	61	31	69	22						6.9
September	35.2	39.5	30.9	52	22	61	13						7.8
October	25.0	29.1	20.9	37	10	52	2						8.8
November	12.0	17.6	6.3	32	-10	40	-21						7.2
December	- 3.3	3.2	- 9.7	24	-26	31	-36						5.5
Year	17.0	23.1	11.0	64	-37	73	-42						6.3
Period	1951 - 1960					1928 - 1960		1951 - 1960					

	PRECIPITATION						WIND			MEAN DAYS WITH		DEGREE DAYS		
	RAIN		SNOW		TOTAL (WATER)		MOST PREVALENT		Average Speed m.p.h.	Fog-Visibility less than 5/8 mile	Blowing Snow-Visibility 6 miles or less	Below 65°F	Below 32°F	Above 32°F
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum fall in 24 hours	Direction	Percentage						
	In.	No.	In.	No.	In.	In.					a			
January	0	0	4.7	6	0.47	0.43	NW	23	10.9	2	9	2412	1400	0
February	0	0	3.1	4	0.31	0.31	NW	15	11.5	1	12	2201	1252	0
March	0	0	2.5	4	0.25	0.30	NW	17	9.9	1	5	2130	1037	0
April	0	0	4.5	6	0.45	0.25	NE	23	11.5	1	6	1653	609	0
May	0.13	1	4.7	7	0.60	0.44	NE	18	11.2	5	3	1237	202	12
June	0.93	5	2.8	3	1.21	1.59	NE	16	10.7	8	1	885	13	131
July	1.59	9	0.1	*	1.60	1.25	W	17	9.8	9	0	688	0	339
August	1.92	10	0	0	1.92	1.15	NE	22	11.1	10	0	698	0	338
September	1.37	7	5.4	4	1.91	2.17	NW	19	10.9	6	1	900	17	118
October	0.38	2	11.3	9	1.51	1.24	NW	27	14.5	4	4	1218	223	10
November	0.03	*	9.8	10	1.01	0.70	N	23	13.0	*	8	1587	622	1
December	0	0	5.5	7	0.55	0.60	N	18	11.6	1	10	2096	1070	0
Year	6.35	34	54.4	60	11.79	2.17			11.4	48	59	17705	6445	949
Period	1951 - 1960											1931-60	1950 - 1959	

* Average less than 0.5
a Period 1955 - 1960

AVERAGES AND EXTREMES OF CLIMATIC DATA

STATION Resolution Island LAT 61° 18'N LONG 64° 53'W ALTITUDE ABOVE M.S.L. 127 Ft.

	AIR TEMPERATURE							PERCENTAGE FREQUENCY OF DAYS WITH MINIMUM TEMPERATURES AT or BELOW					Mean Cloud Amount 10ths of Sky Covered
	Mean Daily	Mean of Daily Maximum	Mean of Daily Minimum	Mean of Monthly Maximum	Mean of Monthly Minimum	Highest Recorded	Lowest Recorded	-10°F	-20°F	-30°F	-40°F	-50°F	
	°F	°F	°F	°F	°F	°F	°F						
January	- 0.4	4.7	5.5	27	-21	35	-36						7.1
February	1.1	6.4	- 4.2	27	-20	35	-32						6.1
March	7.0	11.6	2.3	29	-12	37	-22						6.1
April	16.0	20.3	11.6	33	- 3	39	-20						6.4
May	27.8	31.0	24.6	38	15	45	- 2						7.8
June	33.7	36.9	30.4	46	25	58	16						8.0
July	37.9	42.0	33.8	52	29	59	26						7.3
August	37.9	41.4	34.3	50	30	61	26						7.8
September	35.0	37.8	32.1	46	26	60	14						7.8
October	28.9	31.8	25.9	39	16	45	- 1						8.0
November	21.2	24.7	17.6	33	7	39	-10						8.1
December	9.4	13.7	5.0	30	-10	35	-22						8.1
Year	21.3	25.2	17.3	54	-23	61	-36						7.4
Period	1951 - 1960					1929 - 1960		1951 - 1960					

	PRECIPITATION						WIND			MEAN DAYS WITH		DEGREE DAYS		
	RAIN		SNOW		TOTAL (WATER)		MOST PREVALENT		Average Speed m.p.h.	Fog-Visibility less than 5/8 mile	Blowing Snow-Visibility 6 miles or less	Below 65°F	Below 32°F	Above 32°F
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum fall in 24 hours	Direction	Percentage						
	In.	No.	In.	No.	In.	In.					a			
January	0.03	1	5.6	11	0.59	0.52	W	22	20.5	2	9	2021	1051	0
February	0.01	*	4.0	8	0.41	0.20	SW	20	20.5	1	9	1850	933	0
March	0.02	*	3.9	10	0.41	0.16	W	21	16.1	1	8	1817	747	0
April	0.07	1	2.9	8	0.36	0.18	NE	18	16.2	2	6	1488	460	1
May	0.22	4	3.5	6	0.57	0.79	W	22	14.4	7	2	1181	137	10
June	0.92	9	1.0	2	1.02	0.82	NE	22	13.2	13	0	942	13	69
July	1.48	9	0	*	1.48	1.51	E	19	12.5	16	0	843	0	187
August	1.67	12	0	0	1.67	0.86	E	20	13.5	20	0	831	0	190
September	1.56	12	2.0	3	1.76	1.00	W	18	13.9	12	*	900	5	96
October	0.43	5	7.8	8	1.21	0.80	W	22	18.2	4	4	1113	118	13
November	0.06	1	10.6	14	1.12	0.90	W	20	17.9	1	12	1311	322	1
December	0.01	*	8.5	17	0.86	0.50	W	19	20.4	*	15	1724	688	0
Year	6.48	54	49.8	87	11.46	1.51			16.4	79	65	16021	4474	567
Period	1951 - 1960											1931-60	1950 - 1959	

* Average less than 0.5
a Period 1955 - 1960

CHAPTER 4

COMMUNICATION SYSTEMS

Under this heading the report deals with various communication systems that bear on the area of concern. Once the nature of a particular system has been set down, further division will be indicated by the agency of ownership.

RADIO

The Royal Canadian Mounted Police

The Force operates reliable and well-maintained equipment in the area. The network is restricted primarily to police business but is used very frequently in cases of medical and other emergency when other networks prove too cumbersome or are clogged with traffic.

The equipment employs single side-band and has a power output of 100 watts. The station call-sign for the Cape Dorset Detachment is XJE 473 and the Lake Harbour Detachment uses call-sign XJE 459. Four frequencies are authorized; these are 4785 KHz, which serves as the main frequency; 7780 KHz, an alternate frequency for use when atmospheric conditions on the main frequency are unfavourable; and 4837 KHz which is used when contacting settlements do not have a Detachment, but where the Hudson's Bay Company operates a radio installation. The final frequency, 5681 KHz, is set aside for emergency aircraft communication.

All Detachments on the Force network respond to a scheduled, general call at 1030 hours each morning from the Regional H.Q. at Frobisher Bay. Following this, police business is dealt with and weather information may be exchanged. Generally, all installations are on twenty-four hour standby.

The Bell Telephone Company

A radio installation is operated by the Hudson's Bay Co. under contract to the Bell Co. A similar installation does not exist at Lake Harbour. The D.I.A. & N.D., in connection with its administrative responsibilities, is the principal user of the service but it is receiving increasing use by the public. The power output of the equipment is 100 watts and three channels are used with authorization frequencies as follows: 3298, 5128 and 6781 KHz.

The routing of transmissions originating at Cape Dorset are to the Bell Co. station at Frobisher Bay where, if the calls are destined for southern points, they are patched into a micro-wave transmission system terminating at Goose Bay, Labrador. There, the incoming transmissions are further patched into a tropospheric scatter system to connect with Bell's eastern clearing system at Quebec, P.Q. From there, the call that originated in Cape Dorset is fed into the system familiar in the south.

The entire network is rather excellent and just a few minutes are necessary to reach cities in the south once the call has been cleared into the northern radio network. Preferred rates for the use of the system apply after 2000 hours. The rates schedule and an example of activity for the system are shown in the following tables. The activity table shows only

those calls originating in Cape Dorset, and the rates apply only to that settlement.

TABLE 3

Schedule of Rates for Outgoing Calls

To	Person to Person		Stn. to Stn.	Time Effective
Ottawa & Montreal & Toronto	$5.70 for 1st 3 mins plus $1.05 for each additional minute at any time	-	$3.15 for 1st. 3 mins. plus $1.05 for each additional minute	0430-1800 hrs.
		-	$2.10 for 1st. 3 mins plus $0.70 for each additional minute	1800-2000 hrs.
		-	$5.50 for 1st. 10 mins. plus $0.90 for each additional 2 minutes	2000-0430 hrs.

TABLE 4

Activity on the Bell System

1966			1967								Total
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	
8	7	21	12	12	24	13	22	28	32	48	227

Source: Bell Telephone Company, Quebec, P.Q.

The Hudson's Bay Company

The company has a radio installation at Cape Dorset and Lake Harbour. The Lake Harbour equipment has a power output of 25 watts and Cape Dorset 30 watts. Both installations operate on the frequency range 4837 - 4835.5 KHz.

The network does not have a control station as such and communication is directly between the individual posts. The installations are primarily for this kind of inter-post contact, but are used during the summer to communicate with company vessels. In many isolated settlements, however, the company provides the only means of voice communication with the outside world.

The company is authorized to send and receive personal radiograms on behalf of the public. These are charged for at the rate of $1.00 for the first 15 words, plus $0.05 for each additional word between 16 & 25, and a further additional $0.03 for each word in excess of 25.

The Department of Transport

Marine weather stations are operated by the aforementioned Department on Nottingham and Resolution Islands. The power output of these installations is 400 watts for telegraphy and 300 watts for voice communications in connection with ship-to-shore transmissions. A list of frequencies is contained in radio aids to navigation, vol. 12, D.O.T., Ottawa.

The Nottingham station is staffed during the shipping season by three operators (one of whom is in charge), one mechanic, and a cook. During the off-shipping season the staff is reduced by one operator. The Resolution Island station is similarly staffed where operators are concerned, but messing and mechanical services are provided under an arrangement with the Marconi Company which operates a detection station on the island for the U.S.A.F.

The marine weather stations are required to observe and record data for the transmission of eight synoptic weather reports each day. These stations provide a valuable service to the air carriers through the Meteorological Service at Frobisher Bay which compiles weather charts for the Arctic Region based on the data transmitted by these and other stations.

A second function falls into the marine telephone-service category, making possible ship-to-shore communications.

RADIO AIDS

The Department of Indian Affairs & Northern Development

A non-directional radio beacon is positioned at Cape Dorset to serve as a navigational device for air carriers operating in, or overflying, the area. The beacon is on continuous transmission and major servicing is carried out by the D.O.T. staff at Frobisher Bay who must be flown to the site before repairs can be effected. The equipment transmits on a frequency of 332 KHz with a power output of 400 watts. The identification sign is "TE".

TELEPHONE

The Bell Telephone Company

A subscriber, dial, telephone system was installed at Cape Dorset in the year 1964. Inter-subscriber connection is handled by a small automatic switchboard installed in the community. Government and private agencies are subscribers to the system, along with most of the white and many of the Eskimo residents. Total subscribers number 28.

Hook-up is by buried cable, which has given rise to considerable interruption in the service. During the summer of 1967, the cable could be seen exposed in many places, and completely severed in others. A party of installers was due in the settlement in September of the same year to change the hook-up to a suspended cable system utilizing existing

poles for support. This should remedy most of the operating problems. An in-settlement communication system of this type does not exist at Lake Harbour.

Rates for the service are $3.45 per month for a private residence and $5.60 for official and private institutions. The installation charges are $6.00 and $10.00 respectively.

MAIL

Post Office Department

A contract for the carriage of mail exists between the postal authority and a Timmins-based commercial air-carrier. Under the contract the carrier is required to complete one delivery of mail to Cape Dorset each month during the flying seasons. Generally, ordinary mail routed via Frobisher Bay for Cape Dorset is re-routed via Timmins and Moosonee. Official mail, however, is excepted from this practice and is delivered by any aircraft that happens to be destined for the settlement.

An official post office is operated by the Eskimo Co-operative at Cape Dorset and it is empowered to accept C.O.D. shipments on behalf of outside supply houses, issue money orders, and generally perform the functions peculiar to post offices elsewhere in the country.

There is no contract for the carriage of mail to and from Lake Harbour, although a small post office facility is operated by the R.C.M.P. Detachment in the settlement. As a rule, accumulated mail is brought there and picked up by any visiting aircraft. The mail arrangements at Lake Harbour appear to suffer from a lack of clearly-defined responsibility regarding the placement of mail on aircraft which have no postal authority for its carriage.

AIR TRANSPORT

Air transport is of increasing importance to the area and a graph has been constructed to illustrate the levels of passenger and freight movements for the period November 1965 through June 1967. The data depicted in the graph were obtained through the co-operation of the commercial carriers operating in the area and the R.C.M.P., who supplied passenger head counts in some instances.

The generally unfavourable weather conditions that prevail in the area have been alluded to in the chapter on climate and ice conditions, and mention is made in this section on air transport of some of the disadvantages for aircraft following Visual Flying Regulations. A table is included at the end of the section to illustrate the percentage of time applicable to certain visibility and ceiling combinations which have been arrived at through

hourly observations over a period of seven years.

The table is based upon observations made at Frobisher Bay which is the principal point of departure and return for aircraft servicing the survey area from the east. Range five of the table is pertinent to aircraft following VFR and destined for either Cape Dorset or Lake Harbour. The range of hills forming the north-west side of the Meta Incognita Peninsula are of particular significance.

There are no scheduled air services connecting Cape Dorset or Lake Harbour with other points, or one settlement with the other. The principal reason for this is the insufficiency of economic justification for such a service. A second reason, although rather redundant in view of the previous one, is the absence of a landing strip at either settlement. Such air services as do exist are provided under charter agreements with privately-owned carriers.

Air operations in the area are severely handicapped by landing conditions during certain times of the year. It was mentioned previously that landing strips do not exist. Landings are, therefore, restricted to times when expanses of water relatively free from floating ice are present, and when the sea-ice is of sufficient bearing strength to support a particular aircraft. The phenomena are discussed under the chapter dealing with weather and ice conditions, but are restated briefly for the sake of continuity.

In general, by the end of May sea-ice conditions are such as to prohibit landings by all but the lighter, single-engine aircraft. Although ice thickness may be adequate for larger craft, water-filled depressions and pockets can develop on the surface causing hazardous conditions. Landings by float or amphibious aircraft usually commence about the middle of July and terminate about the end of September.

Although open-water conditions may persist for two or more weeks beyond the end of September, operations can become hazardous due to ice freezing around the landing gear when in the retracted position. Spray and splash-over on take-off is the cause of this and effects the Otter by freezing the nose-wheel in the float well, and similarly the PBY Canso when its main wheels have been retracted into the fuselage wells.

In general, again, landings by ski-equipped aircraft of light weight commence about mid-December, followed shortly thereafter by heavier machines such as the DC 3. And so the cycle is complete. From this brief account it will be seen that contact by aircraft, generally, is not possible for approximately four months of the year.

Austin Airways Ltd.

The main base of this commercial carrier is Timmins, Ontario, and it is a contractor to the Postal Department for the carriage of mail to and from Cape Dorset. The routing of aircraft destined for the settlement is usually via Moosonee and Sugluk. During mail runs the company normally moves passengers and freight to and from the settlement.

A PBY Canso is used during open-water conditions and a DC 3 equipped with wheel-skis when sea-ice conditions are suitable. The former has a pay-load capability approximating 5,000 pounds, and the latter about 3,000 pounds. Both types are operated following "Instrument Flying Regulations" (IFR) which is very desirable in this region.

The D.I.A. & N.D. occasionally charters one or other of the aircraft when the need arises. Such an occasion arose in September 1967 uncomfortably near the end of the open-water period when a large accumulation of freight and passengers had resulted at both Cape Dorset and Frobisher Bay. In other instances, if the potential freight and passenger load justifies it, the carrier will extend a flight from Sugluk to Cape Dorset in order to keep its aircraft capacity as fully utilized as possible.

Wheeler Northland Airways

This company is based in St. Jean, P.Q. and was operating out of Frobisher Bay under an annual charter arrangement with the D.I.A. & N.D. Three aircraft were based at Frobisher Bay during part or all of 1967. Two of these, a single-engine Otter, alternately equipped with wheel-skis and wheel-floats, and a Dornier with wheels only, were included in the charter to the Department. One or both of these aircraft serviced all of the settlements in south and central Baffin Island but, for obvious reasons, only the Otter was employed in the survey area, with the exception of one landing made by the Dornier on the sea-ice at Cape Dorset.

The Otter, being an STOL class aircraft, has definite advantages where this capability can be fully utilized. There has, however, been little opportunity to exploit these advantages to the full at either Cape Dorset or Lake Harbour. An exception to this occurred in the fall of 1967, involving a twin-Otter about which something will be said later in the text.

The disadvantages of the single-engine Otter are its comparatively small pay-load and restriction to "Visual Flying Regulations" (VFR). With wheel-skis the pay-load capability is roughly 1,500 pounds, this is the authorized loading and would vary somewhat with each machine and the distance to be travelled. When the ski apparatus is exchanged for the wheel-float assembly the pay-load capability is reduced by over fifty per cent.

Nordair Limited

Nordair is the only scheduled air carrier in the Baffin Region and connections on a four-times-weekly-basis exist between Frobisher Bay and Montreal. The aircraft used are DC 4's and Super Constellations, carrying a mixed freight/passenger cargo.

The company bases several DC 3's permanently at Frobisher Bay for charter work. These aircraft alternate between wheels and wheel-skis and are, therefore, useful to the survey area only when equipped with the latter gear. The advantages offered by this aircraft are obvious enough and the D.I.A. & N.D. frequently arrange charter flights to Cape Dorset during the appropriate season in order to relieve the burden placed on the single-

engine Otter. Figure 8 illustrates the extent of the freight and passenger accumulation that was experienced in the settlement in May of 1967. A similar situation arose in the fall of the same year and had to be relieved by a charter flight with Austin Airways.

The Eskimo Co-operative at Cape Dorset regularly charters with Nordair for the movement of its handicraft production to the transfer point at Frobisher Bay. Occasional charter flights with this carrier have also been taken up by the Department of National Health & Welfare for the removal of large numbers of medical evacuees.

Georgian Bay Airways

During 1966 this company operated a single-engine Otter under seasonal charter to the Department of Indian Affairs & Northern Development. Its aircraft made a few flights during the early part of 1967 and was succeeded by the Wheeler Northland Otter discussed under the appropriate heading. The company was not active in the area thereafter.

The Royal Canadian Mounted Police

The Regional H.Q. of "G" Division at Frobisher Bay has attached to it a single-engine Otter with pilot and engineer from the Air Division. The R.C.M.P. aircraft is not, of course, engaged in commercial activity but does, nevertheless, account for a considerable amount of official passenger and freight movement. The principal requirement for the aircraft is for the servicing of the Force Detachments located in the settlements, and the general conduct of police business. As well, the aircraft figures prominently in the spheres of emergency medical evacuation and local air searches.

Atlas Airways

The base of this private commercial carrier is Resolute, but one of its aircraft made a few charter flights into Cape Dorset in early 1967, and later in the same year.

The later flights are of particular interest because they marked the first occasion on which an aircraft has landed on the island, on a ground surface, with wheel-gear. It points to the possibility of early improvement in air transportation for Cape Dorset.

The aircraft employed was a Twin Otter, which is superior in many of its technical aspects to the DC 3; not least of which is its STOL classification, along with roughly equivalent pay-load capability when fitted with standard tires.

The first landing was made using oversize tires, followed by a landing using standard tires. The site of the landings may be seen on the Cape Dorset site plan Appendix A showing landing and loading facilities.

Other

A few visits have been received from aircraft belonging to Transair and Lamb Airways. For the most part, however, Cape Dorset was not the final destination of the freight and passenger cargo.

Mr. Ross Thoms, representing a mining company, has been operating his own aircraft along the south-coast for a number of years while engaged in prospecting. The air transport picture in the area has been enhanced by the presence of this aircraft which has assisted in the evacuation of medical cases and the timely transport of survey-staff otherwise marooned for the want of regular air transport. No charge was ever levied for such services.

TABLE 5

Charter & Rate Information

Austin Airways (Based at Timmins)

PBY Canso charter - $252 per hour, or $1.80 per mile
DC-3 " - $215 per hour, or $1.35 per mile

Passenger Tariff	Timmins to	Moosonee	Cape Dorset
		$15	$150

Unit Toll-Freight Timmins to Cape Dorset
$1.15 per pound

Wheeler Northland Airways (Based locally at Frobisher Bay)

Single Engine Otter charter - $155.00 per hour, or $1.55 per mile

Incidental local passenger rate - $0.20 per mile

Unit Toll-Freight $.0020 per/lb./mile

Nordair Limited (Based locally at Frobisher Bay)

DC-3 charter - $221.15 per hour, or 1.65 per mile

Incidental local passenger rate - $0.11 per mile

Not Licenced for Unit Toll Freight Into Cape Dorset

Note: - Charter rates would apply at the bases specified. For charter service at other points, ferry charges would be additional to the rates shown.

- Although the D.I.A. & N.D. charters the Wheeler Otter on season contract, and the Nordair DC-3 on a limited basis, both aircraft are available for private charter work when not employed by that

Note: Subsequent to the preparation of the data appearing in this chapter, applications were placed before the Air Transport Commission by at least two private carriers for the establishment of a scheduled air service between Frobisher Bay and Cape Dorset.

Department. Also, when payload capability is not fully utilized by the D.I.A. & N.D., non-Departmental passengers and freight can be accommodated at the incidental and unit toll rates specified above.

The companion Figure 8 gives an account of air traffic concerning Cape Dorset. Lake Harbour, as might be expected, is not subject to a considerable movement of passengers and freight. It is serviced almost exclusively by single-engine aircraft equipped with either wheel-ski or wheel-float landing gear. An account of air traffic activity for a period corresponding approximately to that submitted for Cape Dorset is given in Table 6.

TABLE 6

AIR TRAFFIC - LAKE HARBOUR

Wheel-ski Operations		Passengers	Freight (in pounds)
1965	Nov.	-	-
	Dec.	-	-
1966	Jan.	-	-
	Feb.	-	-
	Mar.	-	-
	Apr.	-	-
	May	-	-
	-	-	-
1967	Jan.	3	4250
	Feb.	5	1700
	Mar.	20	3330
	Apr.	25	2400
	May	12	2800
Wheel-Float Operations			
1966	July	7	2700
	Aug.	20	3745
	Sept.	16	3800
1967	Aug.	40	5600
	Sept.	16	2200

Sources: Wheeler-Northland Airways Ltd., Georgian Bay Airways Limited

MARINE TRANSPORT

The Department of Transport

The two settlements of Cape Dorset and Lake Harbour are serviced by Northern Service Vessels (Cdn. Coastguard) and privately-owned vessels chartered by the D.O.T. Shipments destined for the settlements are loaded at either Montreal or Churchill. The bulk of the dry cargo is shipped out of Montreal, and bulk fuels and drummed P.O.L. out of Churchill.

Unloading at either settlement is accomplished by lightering barges from the point of anchorage which may be anywhere from three quarters to two miles away at Cape Dorset and usually within one half-mile at Lake Harbour. Unloading is generally effected during high tide because of the unfavourable shoreline and shoaling conditions that develop during low-tide periods.

Generally speaking, the shipping season for the two settlements commences near the end of July and ceases in early October. An extended shipping season would be possible by the employment of ice-breakers in early July but there would appear to be little justification at the present time for this added expense to a shipping tariff that is already substantial.

The Hudson's Bay Company

This company operates several vessels in Arctic waters chiefly for the annual supply of its numerous stores in the region. These vessels carry general cargo for any account when cargo space is available. The ports of Montreal and Churchill are used but the bulk of dry cargo leaves via Montreal as with the D.O.T. vessels.

The cargo tariffs applicable to Hudson's Bay Co. vessels are substantially lower than the published tariffs applicable to D.O.T.-owned or chartered vessels. This will become apparent when the resumé of freight movements and tariffs is examined. The reason for the differential is not immediately clear.

TABLE 7

RESUME OF SEA FREIGHT MOVEMENTS & TARIFFS

DEPARTMENT OF TRANSPORT (N.S.V. & D.O.T. CHARTERED VESSELS)

1966	WEIGHTS IN TONS (TO THE NEAREST TON)	
X-Montreal	Cape Dorset	Lake Harbour
Dry Cargo	479	51
Drummed P.O.L.	33	102
X-Churchill		
Bulk Fuel & Diesel Oil	845	
Total	1,367	153
The Hudson's Bay Co.		
1966		
X-Montreal		
Dry Cargo	96	17
X-Churchill		
Drummed P.O.L.	94	42
Total	190	59
Total Movement 1966	1,557	212
DEPARTMENT OF TRANSPORT		
1967		
X-Montreal		
Dry Cargo	477	144
Drummed P.O.L.	112	271
X-Churchill		
Dry Cargo	126	6
Bulk Diesel & Fuel Oil	1,135	
Total	1,950	421
THE HUDSON'S BAY CO.		
1967		
X-Montreal		
Dry Cargo	135	39
X-Churchill	15	72
Total	150	111
Total Movement 1967	2,100	532

TARIFFS

N.S.V. AND D.O.T. CHARTERED VESSELS	CAPE DORSET	LAKE HARBOUR
X-Montreal		
Dry, High Density Cargo	$125 per ton	$70 per ton
Drummed P.O.L.	$0.65 per gal.	$0.65 per gal.
X-Churchill		
Dry, High Density Cargo	$ 50 per ton	$50 per ton
Bulk Fuel and Diesel Oil	$0.08 per gal.	-
THE HUDSON'S BAY CO.		
X-Montreal	$ 75 per ton	$ 70 per ton
X-Churchill	$ 60 per ton	$ 60 per ton

Note: re Hudson's Bay Co. vessels - high-cube, low density, cargo is charged at rate X $2\frac{1}{2}$

Sources of Data: The D.I.A. & N.D. and the Hudson's Bay Co., Winnipeg

SECONDARY TRANSPORT

Under this heading it is proposed that all other means of transport in the area be mentioned so that continuity in the treatment of communication systems may be achieved in this chapter.

To many in the area, and especially the Eskimo, the canoe, dog-team and tracked snow-vehicle are the primary means of transport. The placement of these in a category subordinate to those previously discussed is not to lessen their importance, but simply to distinguish between those means that connect directly with outside points, possess a central organization, and operate with some degree of regularity and those that do not. To make this meaning clearer, a carrier providing an air service only between Lake Harbour and Cape Dorset would be classed or categorized as secondary transport.

Not so many years ago, the kayak, umiak and dog-team were the only means of transport available in the area and elsewhere. Today, however, these are supplanted by industrially manufactured canoes, peterheads and longliners, and tracked snow vehicles generally of the ski-doo design.

A few dog-teams still remain, but within a very short space of time these will have disappeared altogether. In connection with this survey, T. Badenduck travelled the entire coast of the Foxe Peninsula by dog-team. The distance travelled was approximately 450 miles taking 30 days. It is unlikely that this means will be employed on future studies due to the length of travel time required. A diary of the trip is contained in Appendix S.

Gasoline and diesel oil are the fuels used by local mechanically propelled transport, and as there are no caches in the area, sufficient fuel must be carried by vehicles to ensure the return leg of a trip. There is no organized agency for secondary transport and all means are individually owned and operated by the Eskimos.

Canoes

The price of this versatile craft is within reach of most Eskimo families and is, therefore, the common means of marine transport. The canoes are of freighter design, having square or "V" sterns, with a length usually of 20 or 22 feet. Loads can, and frequently do, range up to 2,000 pounds. The outboard motors employed are generally from 10 to 20 HP, and fuel is carried in assorted containers; the preferred one being the 10 gallon drum.

Canoes are used to transport whole families to summer camp locations along the coast and for hunting. Whites requiring water transport in and about the area can hire an Eskimo with his canoe and motor for about $15 to $20 per day.

Peterheads, Longliners & Whale-boats

These are the largest, local vessels and range in length anywhere from 25 to over 40 feet. The whale-boats normally are open, but those are rare that have not been modified by the introduction of some decking and a small enclosure for protection against the weather. The peterhead and longliner are of similar design with square stern, engine compartment, hold amidships, and a forward compartment for accommodation. The cargo capacity of these vessels ranges from two to 15 tons, depending on length and beam.

The principal use of the vessels was for the hunting of walrus, but as this has not been a serious pursuit of the area Eskimos for some years, they are used for a variety of purposes such as the transport of families, the gathering of soapstone, and for simple hire to whites engaged in work in the area. Some of the soapstone gathering expeditions involve up to many hundreds of miles of coastal travel, over-night anchorages being located at the end of each day.

Most of the vessels are fitted with Acadia engines of Nova Scotia manufacture. The smaller boats are a one or two cylinder model, and the larger ones use engines with four to six cylinders. Most are gasoline powered with a speed in the order of eight knots.

The rental rate for the larger vessels can range from $40 to $85 per day but will vary with the location and the individual Eskimo owner. On the whole, rates are not fixed and are arrived at through negotiation.

Tracked Snow Vehicles

Under this heading are included all tracked vehicles large and small. All of the larger vehicles are located at Cape Dorset. Two Nodwell tracked-carriers are employed on utilities in the settlement and their functions are discussed fully in the section dealing with utilities. The

third and last machine is a Bombardier Snowmobile which is used in the pick-up and delivery of freight and passengers at the aircraft landing site. Rarely, if ever, is it used for transport outside of the settlement confines. Lake Harbour possesses no vehicular transport of this type.

The balance of tracked vehicles are those of the "Ski-doo" design those of Bombardier manufacture appear to be the most popular. The ski-doo is altogether a quite remarkable machine and it, more than anything else, has doomed the dog-team to extinction. Although some Eskimo owners of these machines are given to "hot-rodding" in the southern style, for the most part they provide a now indispensable means of transport throughout the area and frequently perform heavy work much beyond their design capability. Some discussion relating to faults in the machine is set down in Appendix S for the benefit of interested manufacturers. As changes are constantly being introduced, the survey apologizes in advance for its listing of faults that may already have been rectified by the manufacturers.

The numbers of dog-teams employed on active trap-lines are continually being reduced because ski-doos make possible the coverage of great distances in a short time. Trap-lines, however, are rarely travelled by a single Ski-doo but by at least two travelling together. The reason for doing so is perfectly obvious in an Arctic environment.

When travelling, the Eskimos load their towed komatiks with anywhere from a few hundred to 1,000 pounds or more of assorted gear, gasoline and food. The speed of the Ski-doo and the capacity of the komatik for high loading are, of course, the important advantages. For example, the survey travelled from Cape Dorset along the coast to Chorbak Inlet, a distance of 90 miles, in seven hours while traversing numerous areas of rough-ice and pulling loads of several hundred pounds behind each machine. Due to the break-down of one of them, the return leg required a forced loading estimated to be in excess of 1,300 pounds, yet only ten hours were required to complete the run. By comparison, a few weeks previously the outward leg required three days to cover by dog-team.

An overland route exists between Lake Harbour and Frobisher Bay that receives a large amount of Ski-doo traffic. The distance one way is approximately 80 miles and in good weather requires about fourteen hours of travel. Rental rates for a machine, when available, are approximately $15.00 per day, plus fuel.

Dog-Teams

A few teams are still used by the Eskimos in the area, but the problems associated with feeding and the comparatively slow pace at which travel is possible are fast removing teams from the once important place they occupied in secondary transport. Attached to this decline in popularity is the rising nuisance value of large numbers of dogs in the settlements.

Occasional comparisons are made concerning the economics of dog-team and Ski-doo transport but time hardly seems to have been considered in such comparisons. Large teams can pull loads of equivalent or perhaps greater weight than the Ski-doo, and on the whole more cheaply if we

assume that the Eskimo has all the time in the world at his disposal. The present day Eskimo, however, is rapidly becoming aware that prolonged hunting trips caused by the use of dogs can easily cost him more in lost wage-labour income than the value of his harvest from the expedition. With the Ski-doo it is possible to schedule movements with reasonable hope of successfully combining wage employment, hunting and trapping.

The R.C.M.P., long-time users of dog teams as a means of patrolling, are rapidly retiring the animals in favour of Ski-doos and few Detachments today rely on them for transport.

In summary, it becomes evident that Cape Dorset is reasonably well endowed with communication systems operating both within and without the settlement. The number of commercial air carriers connecting with the settlement is rather significant. A profound increase in air traffic has been recorded for the winter season 1966-67 over the corresponding period for the year 1965-66.

Sea shipments for 1967 show a 30% increase over the previous year for Cape Dorset and this can be accounted for largely by the increase in fuel consumption in the settlement. Both years would undoubtedly show more marked increases over 1965, were the figures available, due to the arrival of a large number of prefabricated buildings in the settlement during 1966 and 1967. Movements into Lake Harbour more than doubled as a consequence of buildings being shipped there during 1967.

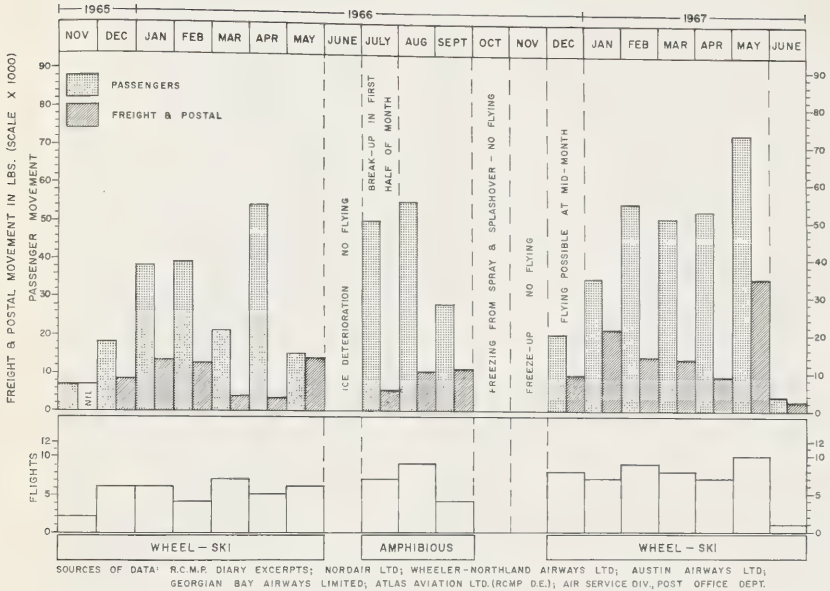
Secondary transport is undergoing a radical change from animal to mechanical means. The area Eskimos have approximately fifteen dog-teams and over 75 Ski-doos; a figure that is increasing monthly.

Postal services are improving but only slowly and should be subject to early examination to make better use of the facilities available in the area. Aircraft loading practices and flight co-ordination leaves considerable room for improvement, without the necessity to increase markedly the number of flights. Some suggestions regarding these and other aspects of communication systems are contained in the report.

AIR TRAFFIC

CAPE DORSET

FIG. 8



SOURCES OF DATA: R.C.M.P. DIARY EXCERPTS; NORDAIR LTD; WHEELER-NORTHLAND AIRWAYS LTD; AUSTIN AIRWAYS LTD; GEORGIAN BAY AIRWAYS LIMITED; ATLAS AVIATION LTD.(RCMP D.E.); AIR SERVICE DIV., POST OFFICE DEPT.

NOTES

(OPERATING PERIOD—JULY 1966/JUNE 1967)

PASSENGER MOVEMENT 424

FREIGHT & POSTAL MOVEMENT 131,587 LBS

GENERAL FREIGHT	67.7%
POSTAL (unclassified)	32.3%

FLIGHTS FOR PERIOD 70

AMPHIBIOUS	28.5%
WHEEL — SKI	71.5%

MOVEMENT ROUTING

SOUTHERN ROUTE (MOOSONEE)

PASSENGERS	16.7%
FREIGHT & POSTAL	32.9%

EASTERN ROUTE (FROBISHER BAY)

PASSENGERS	83.3%
FREIGHT	67.1%

AVERAGE FLIGHT LOADING

PASSENGERS	6
FREIGHT/POSTAL	1880 LBS.

INCREASE IN WHEEL-SKI TRAFFIC

1966-67 OVER 1965-66

FLIGHTS	39%
PASSENGERS	51%
FREIGHT/POSTAL	111%

TABLE 8

CEILING & VISIBILITY TABLE

FROBISHER BAY

PERCENTAGE OF TIME IN AND BELOW RANGE

Range	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1	2.0	2.0	1.2	0.7	0.3	0.8	0.9	1.0	0.3	0.7	0.7	1.9
2	3.6	3.8	2.1	1.0	1.7	2.1	3.3	2.4	1.7	2.6	2.0	3.8
3	3.9	4.2	2.5	1.8	2.6	3.4	5.1	4.5	2.4	4.2	2.7	4.5
4	9.3	8.0	6.9	5.9	7.3	6.5	8.0	7.9	5.3	8.2	5.5	8.4
5	11.9	11.4	11.1	12.3	18.9	19.5	13.9	19.9	20.0	23.7	15.3	23.1

PERCENTAGE OF TIME IN RANGE

Range	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1	2.0	2.0	1.2	0.7	0.3	0.8	0.9	1.0	0.3	0.7	0.7	1.9
2	1.6	1.8	0.9	0.3	1.4	1.3	2.4	1.4	1.4	1.9	1.3	1.9
3	0.3	0.4	0.4	0.8	0.9	1.3	1.8	2.1	0.7	1.6	0.7	0.7
4	5.4	3.8	4.4	4.1	4.7	3.1	2.9	3.4	2.9	4.0	2.8	3.9
5	2.6	3.4	4.2	6.4	11.6	13.0	5.9	12.0	14.7	15.5	9.8	14.7

CODE FOR RANGES

CEILING & VISIBILITY COMBINATIONS

Range	Ceilings (feet)	with	Visibility (miles)	or	Visibility (miles)	with	Ceilings (feet)
1	0-100		0 or more		0-3/8		0 or more
2	200-300		½ or more		½-3/4		200 or More
3	400-500		1 or more		1		400-500
4	600-900		1 or more		1-2½		600 or more
5	1000-2400		3 or more		3 or more		1000-2400

Source: Meteorological Section, D.O.T.,
Frobisher Bay

CHAPTER 5

SETTLEMENTS & PERMANENT CAMPS

INTRODUCTION

Permanent camps, because they have very nearly disappeared from the subject area, are not treated at any length in the report. Their distribution in earlier times is shown in companion Map 6 and an index giving their names and co-ordinates appears in Appendix E. The remaining permanent camps are attached to the settlements as satellite population centres and receive later mention only where they are pertinent to the subject matter being discussed.

PLATE X - Part of permanent camp no. 14, near Chorbak Inlet

Some introductory or background information is introduced at this juncture before other aspects of the settlements are discussed.

Population

With few exceptions, the present population of the area is thought to be descended from Eskimos who migrated to the south coast of Baffin Island from the south side of the Hudson Strait roughly one hundred years ago. This is especially valid for the population of Cape Dorset and is implied in the case of Lake Harbour by the ties of kinship that exist between the respective settlement populations, and the hitherto continuous string of permanent camps located between the settlement sites.

The assumption is made that whatever population existed along the coast at the time of the migration was absorbed ultimately by an in-situ build up of the migrant population. One of the oldest sites of earlier populations in the Eastern Arctic was examined by a team of archaeologists near Lake Harbour in the summer of 1967. It antedates other pre-Dorset sites in the region. A site of the Thule period is located a short distance from Cape Dorset, on Mallik Island. These are indicative of a very early occupation of the south coast by Eskimos, but do not necessarily show that it has been continuously occupied up to the present time.

The population appears most certainly to have been distributed in camps throughout the periods of occupation and this was brought about by adaptation to the locally changing distribution and availability patterns of the marine mammals. This will be made somewhat clearer in the chapter on the exploitation of natural resources.

Notably since 1950, but with earlier beginnings, the camp structure has undergone a disintegration process which today is almost complete. The survey has based the cause on economic grounds and discusses these under the evolution of the economy, in the next chapter. It is not the intention to imply that economic considerations alone are responsible for the dislocation of camp populations, but it would be difficult to believe that they are not the principal source of motivation for the Eskimo in accepting the settlement structure.

Today, the population is concentrated in two relatively small zones of activity, these are Cape Dorset and its vicinity, and Lake Harbour and its vicinity. They are separated by 300 miles of virtually uninhabited coastline, and contact between the resident populations is infrequent, even with today's improved communication systems.

The area population appears to have been between 500 and 600 people over the past twenty years or so, but the records that do exist are sometimes rather vague on this particular point. A considerable inter-camp movement is certain, and in recent years a substantial amount of movement has occurred between settlements; notably from Cape Dorset and Lake Harbour to Frobisher Bay in the 1950's. This, however, has to a large extent been compensated through immigration and natural increase.

Lands and Minerals

These are vested in the Crown, and Eskimo ownership was never established through treaties and/or reservations as was done with certain of the Indians. Crown land may be purchased in the area but so far no Eskimo has seen fit to do so. Land has been leased by the Eskimo Co-operative at Cape Dorset for some of its installations in that settlement and the same has been done by the Hudson's Bay Company and the Anglican Church. As far as the survey was able to determine, this is the total extent of land leasing in the area and outright ownership does not appear to have been acquired by anyone.

Eskimos, like others, may stake mineral claims under the Canada Mining Regulations as they apply to the N.W.T. The administration of lands and minerals is the responsibility of the Public Lands and the Mining Division, respectively, of the D.I.A. & N.D., Ottawa.

Game Regulations

Regulations as they apply to the taking of game are discussed fully in chapter 7. It can be stated at this juncture, however, that generally speaking the Eskimo enjoys somewhat greater latitude in the taking of game, when the fauna spectrum is examined, than the resident non-Eskimo who is qualified to hold a General Hunting Licence. Resident non-Eskimos not qualified to hold a General Hunting Licence and non-residents generally are, of course, far more limited in the taking of game than those privileged in the special cases discussed above.

THE SETTLEMENT OF CAPE DORSET

Population

Structure - May 1967 was selected as the cut-off point for the pyramidal representation of the population structure. Although the survey was in the vicinity much later than May, the frequent changes in the Eskimo population would have necessitated a continuous up-dating of the Eskimo Directory at the expense of other data equally important to the study.

The most striking feature of the Cape Dorset population, as shown by the pyramid in Figure 9, is the marked predominance of young people. Roughly 83 per cent of the population is composed of persons below the age of 35 years, while those above 60 years make up only 1.6 per cent of the total. Comparisons with the Northwest Territorial population of Eskimos and other ethnic groups is shown below:

TABLE 9

Ethnic Group	Total	Below Age 35 Yrs.	Above Age 60 Yrs.
Eskimo	9412	79.7%	3.3%
Indian	5407	72.6%	8.5%
White & other	9765	71.7%	2.9%

Source: The Northwest Territories To-Day, Ottawa 1965

Two satellite camps are attached to Cape Dorset, the populations of which are merged with that of the settlement, in so far as the pyramid is concerned. These are isolated in the following table and appear opposite the camps in question:

TABLE 10

Age Groups

Camp No.	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
9	3	-	3	-	1	-	-	1	-	-	-	-
14	4	2	3	1	1	-	1	1	1	1	-	1

The total permanent camp population is 24, or about 5 per cent of the total population.

Movements

Most movements of Eskimos are those connected with vocational training and confinement in hospitals outside the survey area. These are not considered losses to the population because, by and large, all return, although such absences can and often do run into years.

In 1967 a net loss was incurred by the population as a result of permanent moves. Two families comprising a total of eleven persons moved to Frobisher Bay in February and April, and one family of four persons from Frobisher Bay took up residence in Cape Dorset, resulting in a net loss of seven individuals.

The over-riding factor to consider in relation to population movements, however, is that a complete reversal of the settlement versus the camp population has taken place since the late 1940's. At that time approximately three Eskimo families resided at Cape Dorset and the balance resided in camps spread along the coast. In 1967, three families resided in camps and the balance at Cape Dorset.

Vital Statistics

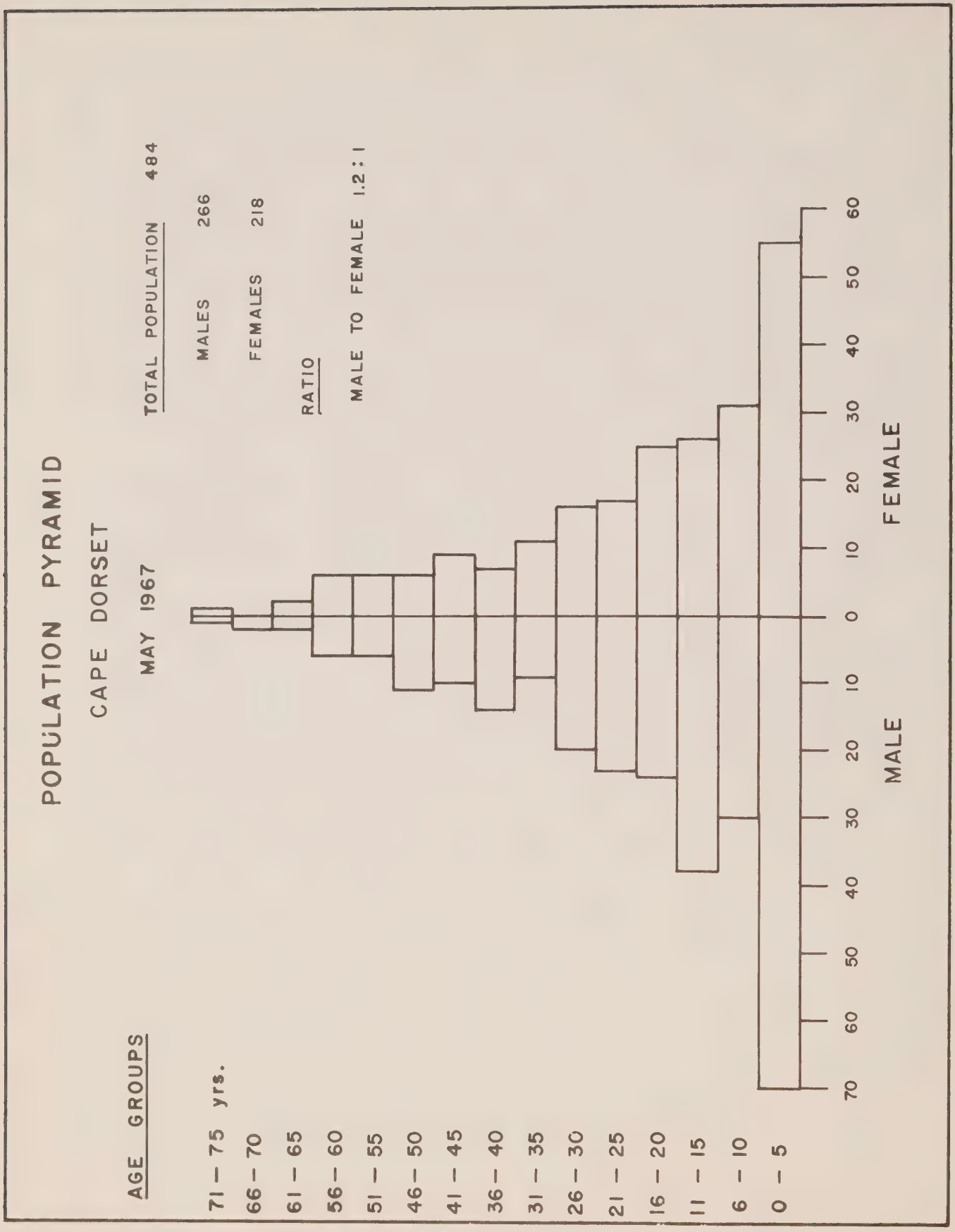
The vital statistics cover the period 1959 through 1966; the last full year for which statistical data were available.

TABLE 11

Marriages	Population	Births	(R.P.M)	Deaths	(R.P.M)	Nat. Increase	(R.P.M)	Year
3	-	17		3		14		1959
3	-	11		3		8		1960
4	340	15	44	5	14	10	30	1961
5	348	20	57	4	11	16	46	1962
3	371	21	56	5	13	16	43	1963
7	405	30	74	7	17	23	57	1964
-	453	23	50	4	8	19	42	1965
4	484	29	60	12	24	17	36	1966

Source: R.C.M.P. Cape Dorset

FIG. 9


POPULATION PYRAMID
CAPE DORSET
MAY 1967
TOTAL POPULATION 484
MALES 266
FEMALES 218
RATIO
MALE TO FEMALE 1.2:1
AGE GROUPS
71 – 75 yrs.
66 – 70
61 – 65
56 – 60
51 – 55
46 – 50
41 – 45
36 – 40
31 – 35
26 – 30
21 – 25
16 – 20
11 – 15
6 – 10
0 – 5
70 60 50 40 30 20 10 0 10 20 30 40 50 60
MALE
FEMALE

To the end of June 1967, no marriages had taken place. Seventeen births and one death were recorded during the same period.

Non-Eskimos

The number of non-Eskimos in the settlement varies from year to year, and the group most given to change is that of the teachers. For the most part, the non-Eskimo population may be considered itinerant and exceptions to this are the Secretary of the Eskimo Co-operative and the Manager of the Hudson's Bay Co., both of whom have resided in Cape Dorset for many years. The same is true for the Anglican Minister and his family who took up residence in the community in 1961. In September of 1967, the non-Eskimo population was made up as follows:

TABLE 12

Occupation	Adults	Children	Total
Minister	2	3	5
Secretary, W.B.E.C.	2	-	2
Area Administrator	2	-	2
Manager, H.B. Co.	2	-	2
Clerk, " " "	1	-	1
Manager, W.B.E.C.	2(wife teaches)	-	2
Clerk, W.B.E.C.	1	-	1
R.C.M.P.	2	3	5
Power Plant Operator	3	3	6
Nursing Station	2	1	3
School Principal	2	1	3
Teacher (both teaching)	2	-	2
Teacher	1	-	1
Teacher	1	-	1
Totals	25	11	36

Social Structure

In the old camp society the social structure was based on a leadership system by a single individual whose position was established by his hunting prowess, by the ownership of a larger boat, or a combination of both.

In the settlement, where the population consists of former camp populations, many social adjustments have had to be made to adapt to the new environment. Former camp leaders have, for the most part, lost the prestige they once held in the camp society but, at Cape Dorset at least, adjustment appears to be complete even though some residual power appears to remain. At one time a great deal of dependence for survival was placed on camp leaders by the Eskimo families, but in today's society dependence is transferred

to the several agencies which, by their presence and functions, have removed the need for worry in this regard.

Direction in the social structure now tends to be provided by groups or councils such as the Directorate of the Eskimo Co-operative which, although a commercial organization, exerts a profound social influence on the community. As well, a community council or committee composed of Eskimos, with the exception of one non-Eskimo member who acts as treasurer, is extant in the community and concerns itself with Eskimo social affairs. In 1966, the council, known as "Ptarmigan" was encouraged by the Area Administrator to enlarge its scope and at some future date assume the role of the Eskimo Housing Authority. The officers of the council, and those officers who ultimately will direct the actions of the Housing Authority, are with minor exceptions Eskimos duly elected by the Eskimo community. Sufficient indicators are provided in the foregoing to show that irreversible changes have occurred and continue to occur in the Eskimo society, and are sufficiently advanced at Cape Dorset to make the idea of a return to permanent camps unrealistic, and the idea of a greater exposure to western society altogether inescapable.

The interdependence of members within an Eskimo family, and to a large extent, of one family and another, is a highly developed characteristic of the people but is becoming less and less so as the older generation decreases in number. It will, nevertheless, remain as a factor to be reckoned with in any emigration affecting the Eskimo populace in the near future.

Parental control respecting youth has deteriorated somewhat as a result of the change from a camp to a settlement environment. This kind of deterioration, however, is not unknown in the sophisticated south where populations have migrated from rural to urban communities. The general lack of recreational facilities in the north serves to aggravate the problem, as does the lack of gainful employment. The Anglican Church and the Government do a great deal to alleviate the problem through youth organizations and community projects providing employment. Youth, however, and its behaviour will remain a part of settlement life and the processes of social change that are taking place. The problems associated with this aspect of settlement life will have to be solved in a rational way with increased employment and improved recreational facilities.

The Eskimo Community Hall, constructed in 1960,serves as a focal point for a large part of group social activity. The Anglican Church buildings serve as a second such point. Most meetings of social import to the community are held in the community hall which is also fitted, however inadequately, for the showing of movies three times per week. In 1967 the Area Administrator set aside a disused building as a youth recreational centre. A record player and a small pool table were installed and the premises received some use until later in the year when it was closed because the Eskimos' propensity for gambling was being exercised.

PLATE XI - The Community Hall at Cape Dorset

From the vital statistics relating to the population it can be seen that marriages and, therefore, new family formations are relatively few. This is largely due to economic conditions which presently afford little opportunity for permanent employment for the younger age groups. The social structure in the settlement has to some extent adapted to this circumstance where the younger, unmarried people are concerned. Illegitimate children are readily and easily adopted by the older Eskimo families much the same way as unwanted or unsupportable children were under the social structure of the old camps. It would seem unwise, however, to look upon this as anything more than a temporary expedient because the burden is unlikely to be acceptable to the younger family units which will be largely settlement-orientated and less versed in the older customs.

Eskimo marriages are by Church Banns or by Eskimo custom. The latter are recognized under the laws of Canada.

The Site

Cape Dorset is located on the north side of Dorset Island where it opens on to a channel separating it from Mallik Island at high tide. At low tide the two islands become joined by a barrier beach, or saddle of unconsolidated material, located to the west of the settlement.

To the west, the Kingnait Hills form an impressive back-drop to the settlement. Because personal tastes and appreciation vary to a great extent where scenery is concerned, the survey chooses to reserve its own judgement but includes some photographic evidence of its appearance in the vicinity of the site.

Like so many other sites, both in the north and south of the country, the Cape Dorset site is only fair, when all the physical factors are taken into consideration. Drainage, in places, is poor; formidable irregularities in the surface of the ground might be expected to add to the cost of expanded construction which so far has managed to use up a substantial part of the relatively regular surface area; an abundant supply of potable water is at a distance not wholly acceptable to the community. However, development of the site has progressed to a point where change of location is not a practical consideration and few, if any, alternative sites have advantages substantially superior to the present one.

Legal property surveys have not been performed in the settlement, but likely will be required when a plan for over-all development of the community emerges. (See plan Appendix A)

PLATE XII - View of Cape Dorset taken from the summit of "Kingnait". The dual settlement structure is clearly visible.

Housing

Eskimo housing since the early 1950's has appeared in the settlement in a multiplicity of experimental designs. The year 1966 saw the first of the newly-designed Eskimo low-rental units erected in the settlement. By the end of that year, 25 three-bedroom units had been occupied. In 1967, a further 24 units were erected bringing the total to 49. Most conform to the standard plan No. 439, an illustration of which is included in this report.

The new houses constructed during the past two years are not additional to those that were already in existence, but simply replaced an equivalent number of the older inadequate structures, some of which were hauled out of the settlement and placed on the shore-line near the old Catholic Mission. Others simply were not fit for habitation of any kind and were demolished.

The total number of houses presently occupied by Eskimo families is approximately 75. If the rate at which new families are formed moves upward from its present low, the requirement for more housing will immediately arise.

The houses are constructed on a pad consisting of rock ballast surfaced with gravel. Basic furniture is included with the building and the Eskimos may augment this if they choose to do so. Services are provided and are discussed under the section on utilities. In general, it may be said that the new Eskimo housing is superior in many ways to much of the rural and urban housing in the south.

Utilities

A "utilidor" is not present in the community; such services as water and sewage are, therefore, available mainly by haulage. Besides those services, utilities include the delivery of fuel-oil, now also a public service.

Water

The community water supply originates in a small and shallow lake about one half mile south-west of the settlement at an elevation of approximately 200 feet A.M.S.L. Its depth is not likely to be in excess of five feet and it usually freezes to its bottom during the winter.

Potable water during the winter and spring is obtained by the melting of ice blocks which are cut periodically and piled on the ice surface for later haulage to the settlement. Haulage is accomplished by a Nodwell tracked-carrier with a chassis-mounted box. The vehicle draws four tons per trip. Up to and including the spring of 1967, cut ice was delivered only to those premises occupied by Government personnel. By the end of 1967, however, forty-nine Eskimo low-rental houses will have been erected and occupied and the supply of water is guaranteed in the housing scheme. Although the new housing does not signal an increase in the population, water consumption can be expected to rise substantially as a result of those new structures and their improved facilities.

During the summer and early fall, water is obtained from a swift-flowing stream which issues from the small lake described earlier. The water pump is installed in the stream close to the graphic print shop of the Eskimo Co-operative. A black plastic pipe is simply placed in the current with its intake facing upstream and the other end is fed into a shallow well pump, complete with an eighty gallon pressure tank. The pump seen was of the piston variety with a capacity of roughly 250 gallons per hour. A rotary jet-type pump was used on some occasions and these have

about double the capacity of the former. Both are intended for individual dwellings, of course, and are entirely inadequate for the purpose to which they are put. A network of plastic piping is laid on the ground surface throughout the settlement and certain take-off points for water are designated. These have a standard valve and water is removed by the Eskimos in buckets. Water for the Government Establishments is fed by hose directly into stainless steel tanks contained in the buildings. Potable water is obtained following passage through a ceramic filter.

All that has been said applies only to the main settlement at Cape Dorset. In Mission Valley, at the time of the survey, water was being drawn from a stream flowing through the built-up area.

Sewage

Effluent is handled the same way as ice, i.e., by haulage. A dumping area was established a few years ago about three quarters of a mile to the south of the settlement on a saddle-like feature; fortunately with a southerly slope to the Hudson Strait. Effluent and all manner of refuse is disposed of in this area.

The old "chemical-style toilet" featuring an inner pail and outer enclosure serves as the receptacle for human waste. In non-Eskimo establishments, plastic bags are placed in the inner pail with the opening folded over the lip of the pail. When nearly full these are tied and placed in opened 45 gallon drums for pick-up. Eskimo houses had none of these bags and the effluent was simply dumped from the pail to the open drum, and later collected in the ordinary way.

Collection during the summer is three times per week. When sea-ice conditions prevail, collection is on a twice-weekly basis and the sea-ice about a mile from the settlement becomes the dumping area. When break-up occurs in July, the refuse is, hopefully, carried out to sea or simply disappears in-situ through the accelerated melting of the ice below.

Fuel Oil

The introduction of new Eskimo housing will require an improved delivery system to assure the timely delivery of required fuel oil throughout the settlement. The annual consumption data are given in the chapter on the economy.

As mentioned under Secondary Transport, three of the larger tracked vehicles are available, but one of these doubles for ice haulage by the removal of the tank. The second carrier is intact and the Snowmobile which services the aircraft could, perhaps, be devoted to ice haulage on a part-time basis thereby releasing the first mentioned fuel oil carrier for longer periods. Whatever method is employed delivery will be difficult.

Fuel oil is stored in bulk in two 140,000 gallon tanks located near the high-tide mark, close to the Hudson's Bay Company compound. Increased consumption will require the installation of one additional tank in 1968.

New housing units are entitled to 1,850 gallons of fuel oil per annum and a recording system is set up to account for the progressive consumption of each. Tanks of 200 gallon capacity are installed adjoining each housing unit.

Electric Power

Three diesel-driven generators are the source of supply. These are mounted in a power house constructed in 1966 to replace an older one. Each unit has an output capacity of 100 kw.

PLATE XIII - The Power-House at Cape Dorset

The distribution system is suspended from metal poles made of hollow, telescopic sections. The poles are supported at their bases by cribs consisting of boulders with a sleeve of galvanized sectional conduit roughly four feet high and six feet in diameter.

The transmission voltage is 550 AC which is further reduced to 115 VAC after passing through distribution/reduction transformers to the domestic and other users. In the fall of 1967 a party from the Marconi Co was sent to the settlement to install heavier cable and transformers for greater load carrying capacity. The mains will be rated at 4,130 VAC with a further reduction to 115 VAC.

Miscellaneous

Under this heading have been included certain public services which fall within the category of a public utility. The first of these is the community freezer.

This is a structure with dimensions of 15' x 24' completely insulated and having an inner and outer sheathing of galvanized steel. The interior is a combination of locker sections and open shelves for the storage of perishable goods. The freezer has a holding capacity of 24,000 pounds.

Two compressor units are mounted on the exterior of the rear wall and protected from the weather by a small lean-to. One unit is in continuous operation and the second serves as a standby. The units have given considerable trouble since the freezer was constructed and placed in operation in 1962. It is understood that the compressors are to be replaced by better models.

The existing capacity appears adequate for the present, but a useful modification could be introduced by the construction of a small interior compartment for the storage of seal-meat. This would entail the placement of an additional, small compressor unit which would avoid the tainting of other perishables by the seal meat.

The second utility to be mentioned is known as the bath-house. The structure is made up of older buildings that have been joined together to house a shower, bath, washing machines and dryers for the use of the Eskimo community. The building is heated and hot water facilities are installed.

Good use is made of this establishment which is located in the main area of the settlement. In the summer of 1967, a second structure was erected in Mission Valley using older one-room houses which had become surplus.

Roads

The settlement area has very nearly two miles of gravel-surfaced roadway, part of which connects the two segments of the settlement. Each house in the community is connected to some part of the road system by a driveway to facilitate fuel oil deliveries.

A considerable amount of road surfacing work was performed by the construction crew assigned to erect Eskimo housing during 1967. In addition, a branch road was built to connect the R.C.M.P. buildings with the road system, primarily because the Administration had contracted with the R.C.M.P. for the delivery of fuel-oil and ice. Prior to this the force had looked after its own supply problem.

PLATE XIV - Road building in the summer of 1967. The road is being built to connect the R.C.M.P. compound with the settlement to facilitate the delivery of ice and fuel-oil.

Equipment & Maintenance

A quantity of light and medium equipment has been acquired by the settlement over a period of a few years. With the exception of a tractor and farm wagon owned by the Eskimo Co-operative, all of it is owned by the Department of Indian Affairs & Northern Development and operated by the local Eskimos. Apart from the three tracked vehicles mentioned earlier, the equipment is chiefly of the earth-moving class and includes a five-ton dump truck. Three farm-type wagons are used for general haulage.

The maintenance facilities consist of a metal garage constructed in 1963. A repair pit is sunk in the floor but during the spring and summer is filled with water. The garage has three bays which will allow entrance to the largest of the equipment presently in the settlement. One Eskimo mechanic is employed full-time and is under the supervision of the non-Eskimo power-plant operator who, at the present time, is responsible for equipment maintenance as well.

It is very likely that, as the settlement expands, there will be a need for heavier earth-moving equipment; especially in connection with site levelling which will be required before too many more structures are placed on the site.

PLATE XV - The three-bay garage with a Payloader, Case Diesel Crawler and Nodwell Tracked Carrier parked in front. The D.N.H.W. Nursing Station appears in the background.

D.I.A.N.D. also has a quantity of small capital equipment in the settlement in the form of a few small boats, several outboard motors and assorted items, most of which are listed in the appendix.

Health

Community health is the responsibility of the D.N.H.W., acting through its "Nursing Stations", where established. Cape Dorset has a rather excellent station which is both well-equipped and managed. A floor plan is shown in Appendix K.

The unit was housed in a new structure in the year 1960 and this still serves as the medical centre. A dispensary is located on the premises, as are refrigeration facilities for certain of the drugs and vaccines. The staff consists of a husband and wife team of R.N's supplemented by three Eskimos to handle general duties in and about the establishment.

The extent of surgical operations is limited to those of minor nature. Extractions and fillings are also undertaken by the team. Incubation, X-ray and oxygen equipments are installed on the premises and four beds are available for patients.

The work load placed upon this station is a formidable one and some provision should be made for vehicular transport to deal more efficiently with the large number of house visits required in the community. Some idea of the magnitude of these and other activities at the station can be

gained from the companion tables. In addition, a useful modification to the present structure could be made by the outward extension of the waiting-room. More often than not this small enclosure is crowded beyond capacity and places an unnecessary burden upon the station staff and the patients requiring examination.

According to the tables the average number of evacuations to the hospital at Frobisher Bay was six for each month. These would consist of cases requiring treatment of a kind not available at the station. The four months of each year when aircraft cannot land at the settlement is the period of greatest risk for seriously ill patients. During such times radio contact with the doctors at Frobisher Bay is reverted to in order to give all the aid possible to serious cases pending the arrival of emergency aircraft.

Medical services are also rendered by the medical staff of the C.C.G. Vessel, Howe, which visits the settlement annually. Nearly every Eskimo in the settlements and nearby camps is given a medical examination and X-ray on these occasions. Cases requiring evacuation are taken on board ship with personal belongings for later transfer to hospitals in the south. The largest number of evacuations concerns those cases in which active tuberculosis is detected.

TABLE 13

Clinical Activity 1967

	Jan	Feb	Mar	Apr	May	June
Tests						
Specimens to lab.	-	15	-	3	2	-
Sputums	25	11	9	138	11	4
Hemoglobins	38	40	46	48	214	40
X-rays	40	6	456	33	23	1
T.B. immunization BCG	1	2	3	1	4	2
Mantoux	2	-	-	1	1	-
Admissions						
	6	5	4	4	6	6
Discharges	7	5	4	4	6	6
Patient Days	16	10	11	11	13	24
Evacuations	9	3	10	2	6	-
Clinic Attendance						
New cases	139	146	170	121	119	142
Visits to clinic	726	547	631	660	634	617
Discharges from Sanitorium	-	1	3	-	1	-
House Visits	147	120	206	188	153	185
Staff Hours						
Reg. Nurses	352	320	368	320	368	320
Interpreters	171	162	160	152	163	135
General Help	312	295	368	304	371	371

TABLE 14

Clinical Attendance Detail

Cases & Cause

Visits to Clinic	Bronchitis & other Resp.	Gastro Intest.	Influenza	Ear, Nose Throat	Skin	All other
Jan - 726	14	19	9	24	15	64
Feb - 547	20	10	6	46	-	61
Mar - 631	32	30	13	37	17	41
Apr - 660	18	32	9	23	6	85
May - 634	7	9	8	38	13	44
June- 617	19	34	19	22	11	37

Note: Total visits during the calendar year 1966 amounted to 5,343

Source of data: Nursing Station, D.N.H.W., Cape Dorset

C - Cases
H.D-Hospital Days

TABLE 15

IN PATIENTS TREATED AT CAPE DORSET NURSING STATION

	1963		1964		1965		1966		1967	
	C	H.D.	C	H.D.	C	H.D.	C	H.D.	C	H.D.
January	16	75	5	23	1	8	4	30	6	16
February	4	12	3	5	3	8	5	17	5	10
March	9	47	6	34	2	14	10	40	4	11
April	4	21	2	2	2	20	14	50	4	11
May	2	4	7	33	7	18	4	7	6	13
June	2	63	5	11	6	19	5	11	6	24
July	-	-	-	-	1	5	1	1		
August	6	18	7	34	12	29	3	33		
September	-	-	5	18	5	18	6	15		
October	3	10	4	11	7	22	4	10		
November	-	-	2	7	7	14	4	23		
December	2	2	7	18	4	11	3	23		
Totals	48	252	53	196	57	166	63	230	25	61
X-Rays	634		930		491		702		554	

Source of data:
Nursing Station, D.N.H.W.,
Cape Dorset,

The section on vital population statistics shows that 43 deaths have been recorded for 1959 through 1966. The deaths are attributable to the following causes:

TABLE 16

DEATHS

Cause	No. of Deaths
Respiratory diseases	11
Heart "	3
Asphyxiation	6
Gastro Enteritis	3
Meningitis	3
Cancer	1
Heptic Coma	1
Pulmonary Embolism	2
Ante Partum Haemorrhage	1
Influenza	2
Still Born	1
Premature Birth	2
Dog Bites (perforated skulls)	2
Burns	1
Unknown	4

Source: R.C.M.P., Cape Dorset

Administration

The Administration in the settlement, and the area as well, is the responsibility of the Northern Administration Branch, D.I.A. & N.D. In the settlement, an Area Administrator appointed by the Department carries out administrative policy and generally assures the functioning of the settlement and the welfare of the residents. There are no judicial responsibilities attached to the post at Cape Dorset.

In the normal course of his duties, the Area Administrator deals with the issue of welfare vouchers to needy families; assumes the over-riding responsibility for all Government property and its care; initiates community projects with the co-operation of the Eskimo residents; and generally offers encouragement to their social advancement.

In addition to those duties, he is required to prepare annual estimates of capital equipment requirements and operating expenses for the settlement, and to submit a quarterly report on all aspects of settlement activity.

The Area Administrator is directly responsible to the Regional Administrator at the regional centre of Frobisher Bay who, in turn, is responsible to the Administrator of the Arctic at Ottawa. The chain of responsibility may be expected to undergo modification as the Territorial Government of the Northwest Territories at Yellowknife becomes more deeply involved in the Governmental processes affecting the Territories.

The administrative complex is housed in a building in the main part of the settlement. The structure is approximately 20' x 44' and houses the administrative staff consisting of the Administrator, a full-time clerk, and occasionally a part-time typist and interpreter. The first officer to serve as Administrator of the settlement was appointed in 1957.

The Royal Canadian Mounted Police

The prime responsibility of the Force is law enforcement. It would be grossly misleading and unfair, however, to convey the impression that this is the sole area of Force activity in the north.

Detachment officers frequently wear many hats because they handle a range of functions which normally would be the responsibility of other Departments of the Government, if settlements were of a size sufficient to warrant their more direct involvement.

Late in the year 1965 the R.C.M.P. established a detachment at Cape Dorset following a period of generally unfavourable conduct on the part of Eskimos in the community. Previously, the settlement came under the jurisdiction of the Detachment at Lake Harbour and had to be visited by regular patrols using canoe and dog-team. The distance to be travelled in this fashion was nearly 600 miles. The introduction of the Otter aircraft of the Air Division, described under "Air Transport", and the subsequent concentration of the population have eliminated the need for lengthy patrols of that kind and have restricted them to visits to the satellite camps that do remain and to ground searches for lost persons.

Vital population statistics of the settlement are kept by the R.C.M.P. as are the Eskimo Directories. The Detachment Officer is responsible for the issue of general hunting and special game licences and serves as a game warden as well. Innoculations against rabies for dogs are given by the officer and he is also responsible for dog control.

The Detachment at Cape Dorset has attached to it an Eskimo Special Constable who lives permanently in the R.C.M.P. establishment and assists in the police functions. In 1968 it is likely that a small jail will be established in the settlement for the containment of offenders given jail terms of perhaps up to two months. At present, all offenders must be transported under escort to Frobisher Bay to serve their sentences.

The Judiciary and the Office of the Coroner

The appointments of Justice of the Peace and Coroner were, at the time of the survey, filled by a non-Eskimo resident of the community, Mr. T.P. Ryan. The Justice of the Peace presides over a Court of Summary Conviction under section 694 of the Criminal Code of Canada, which allows passage of a maximum sentence of up to six months, or a maximum fine of $500.

Court sessions are usually held on the R.C.M.P. premises because no other building appears suitable for the purpose. In the event of an accused being convicted, he would be released on his own cognizance pending the arrival of transportation to Frobisher Bay. Except in aggravated cases, this is the general rule that would apply in the local circumstances.

TABLE 17

Summary Court Convictions

Cases

Offence	1964	1965	1966	1967 (to July)
Causing a disturbance	2		1	2
Illegal manufacture of liquor	3		2	
Pointing a fire-arm		1	2	1
Willful damage			1	
Intoxication			5	4
Common Assault				1
Assault			3	
Minor consuming			2	2
Removal of vehicle without consent of the owner				1
Property damage under $50				1

Source: R.C.M.P., Cape Dorset

It is clear that most offenses are liquor offenses, and most others are probably attributable indirectly to liquor. An Eskimo, like any other Canadian, is free to order alcoholic beverages from the Territorial Liquor Store at Frobisher Bay, or to apply to the authorities for a permit to brew beer for consumption on his own premises. These facilities appear adequate and an outlet in the settlement in the foreseeable future would not appear necessary.

A Coroner was appointed for Cape Dorset in June of 1966 by the appropriate authority. To date, the appointee has not found it necessary to exercise the powers of his office in other than ordinary circumstances.

Religion

All Eskimos in the community are Anglican. A Catholic Mission existed in the community during the period 1938-1960 and closed because it was unable to attract a following. The Mission buildings were later sold to an Eskimo family to be used as housing.

The Anglican Church is located in "Mission Valley" along with a house for the Minister and his family. The Church was established in 1961 when the Rev. M. Gardener arrived from Lake Harbour to take up residence. As a Mission, however, the Anglican Church established itself on Dorset Island in the early 1900's. Missionaries made annual journeys from the mainland and visited the Eskimo camps in the vicinity to give secular training and to perform marriages and baptisms. The Rev. Gardener visited Cape Dorset annually for the three years prior to his taking up residence in the settlement; although at the time he was the Anglican Minister residing at Lake Harbour

PLATE XVI - the Anglican Church at Cape Dorset

Catechists were trained to carry on the work of the Church while the Minister was absent and in each camp there was generally someone, usually the camp "boss", who carried out this function. In the few camps that remain, this is the way it is today. Meanwhile, however, the Church body in the settlement has grown considerably and the Minister finds himself

with as much, and very often more, work than his counterpart in a large town. Some idea of the schedule is conveyed by the summary of services outlined below.

Sunday - Five Sunday school classes are held each week with a total attendance of about 120 children. This continues for the period August through May. Regular services total three, i.e., two for the Eskimos and one for the non-Eskimos.

Monday - Preparation class for Sunday school teachers. Fifteen teachers are in training from 1700 to 2330 hours.

Tuesday - A meeting of the youth group is held in the evening at the community hall. It is usually followed by games and concluded with a talk by the Minister. This activity is confined to the winter months September through May.

Wednesday- Instruction classes are held for adults in the evening during the months October through April. The attendance is usually about 30. The women's auxillary also meets on this day.

Thursday- The Minister attends to tasks in the household and Church buildings, and to a variety of matters which may have arisen during the week.

Friday - Is set aside for Church vestry meetings; youth group meetings; the training of baptismal sponsors and extraordinary meetings or classes that may be required.

Saturday- Choir practice is generally held on this day, and also practice sessions for Lay Readers. Two of the latter are officially appointed and a further two are in training.

Education

School facilities have existed in Cape Dorset for seventeen years, but it was not until 1957/58 that the size of the student body, and the regularity of attendance, was such that it may be said the Federal Day School began to operate. Enrolment at the time was approximately thirty students.

Between 1950 and 1957, regular attendance was indeed small, being represented by the children of the few families permanently residing in the settlement. Lessons were provided for camp children on those occasions when their parents had reason to bring them to the settlement for short periods of time. Study matter was also given to the children so they might continue to study while in camp. When possible, the lessons were returned to the teacher for appraisal of the child's progress. Up to 1957 the teacher would, when conditions permitted, make a tour of outlying camps and remain a day or so at each one in order to supplement the education of the children.

In the early 1960's two hostels were erected in the settlement for the accommodation of camp children so that regular attendance could be boosted. The hostel concept was not a success and was beset by insurmountable difficulties

from the very beginning.[1]

PLATE XVII - Three-classroom, Federal Day School. Three additional classrooms were acquired by the conversion of two hostels and an old school-house near the shore-line.

The table that appears below is a recapitulation of attendance levels since the year 1960-61. Included as well are data pertinent to teacher involvement and classroom capacity.

TABLE 18-

School Activity

Year	Pupils Reg'd	Class-room capacity	Attendance Distribution by grades AU	1	2	3	4	5	6	7	No. of Teachers	Teacher Days
1961-62	57	50	-	26	12	4	2	3	-	-	2	342
1962-63	71	75	-	47	5	11	3	3	1	-	3	429
1963-64	68	100	9	38	7	4	4	4	-	1	7	759
1964-65	70	100	16	14	21	8	6	-	5	-	4	790
1965-66	87	100	14	9	23	23	12	3	2	1	4	693
1966-67	115	125	22	20	26	26	9	9	2	1	5	1005

Source: B.W. Lewis, principal and D.I.A. & N.D. files, Cape Dorset

1 A report entitled "Education in Cape Dorset to 1967" was prepared by Mr. B.W. Lewis who served as principal in the settlement for four consecutive years. The report discusses the hostel concept as applied to Cape Dorset and is an excellent analysis of education in the settlement up to 1967.

About five Eskimos in the community could be considered as having reasonable fluency in English, and perhaps ten others could be classed as fair.

The population pyramid for Cape Dorset shows a total of 125 children in the age group 0-5 years. The group is divided by sex in the proportion 70 male to 55 female. Taking the very latest field data available to the survey at the time of the May 1967 cut-off for the construction of the pyramid, the detail of the 0-5 years group was as follows:

	Male	Female	
In first year	28	19	
In second year	7	13	
In third year	19	6	
In fourth year	6	11	
In fifth year	10	6	
Totals	70	55	125

A wide range of vocational courses is made available to Eskimo youth through the auspices of the Education Division of the D.I.A. & N.D. The attendance has been substantial over the past few years and training facilities are being expanded with each passing year.

Some aspects of this kind of training, however, were not too clear. For example, case histories covering the period following graduation were either not kept or were not available. In some cases gainful employment that corresponded to the type of training received was simply not available in the settlement. In still other cases tangible support for trainees was not forthcoming following their graduation.

It is certain that most of these disadvantages in the program will disappear with time, experience and post-graduation planning.

Eskimo students departed Cape Dorset in the fall of 1967 to attend vocational training courses of a kind and at the places shown in the following table:

TABLE 19

VOCATIONAL TRAINING

Location & Type of Course	Students Female	Male	Duration
Churchill Vocational Centre Commercial Course	2		Three year course the first year of which is pre-vocational.
Practical nursing	1		Four years
Pre-vocational	5	4	One year

Location & Type of Course	Students Female	Male	Duration
Kootenay College of Art			
Pottery	1		Two years
Canadian Army, Chilliwack, B.C.			
Heavy equipment operation		2	Six months

Private Commercial Establishments

The West Baffin Eskimo Co-operative Ltd.

The structure of the W.B.E.C. is like that of most co-operatives in that it is composed of a paid-up membership with minimum entitlement of one share per member. A board of directors elected by the members is responsible for the formulation of business and management policies. The wishes of the Board are executed by the Manager of the enterprise. The Eskimo co-operative at Cape Dorset engages three non-Eskimos who fill the positions of Manager, Secretary & Art Director, and Bookkeeper/Clerk. The Co-operative has a dual structure made up of a "Consumer Division" and a "Producer Division". The former consists of a retail store which serves an an outlet for general merchandise, and the latter is concerned with the production of Eskimo arts and crafts such as stone carvings, graphic prints, printed fabrics and wearing apparel. In addition, the Producer Division has calendars and greeting cards printed in the south using original designs by its members.

The name, the West Baffin Eskimo Co-operative Ltd., came into being in 1960 although its beginnings go back to 1957. The Co-operative is registered in the N.W.T. and its charter authorizes it to engage in a variety of pursuits, the most important of which are referred to below:

> The entity is permitted to: purchase goods and merchandise and to market same to its members and the general public; to market those goods produced by its members; to carry on all business transactions connected with tourism and to construct and operate camps for the lodging and boarding of tourists; to organize operations connected with the prospecting, staking and the development of natural resources, etc.

Source: Charter of the W.B.E.C.

This and other Eskimo co-operatives were made possible through loans made available to the Eskimos for such purposes by the D.I.A. & N.D. Such loans are limited to $50,000 for the acquisition of buildings, stock, tools, etc., in a quantity sufficient to launch the enterprise and assure it of initial operating capability. Additional loan funds are available depending on the measure of progress made by the co-operative and its capacity to assume an expanded debt.

The co-operative touches on the livelihood of every Eskimo family in the community. For many of them it is the only source of wage employment, while for others it is a large contributor to income through the purchase and sale of Eskimo handicraft products. In addition, intangible rewards for which the co-operative is responsible rest in the social, educational and psychological spheres. These are, altogether, considerable and work to the benefit of every Eskimo. This is especially true of the Producer Division.

Since 1957, before its present name came into use, the co-operative managed with help to amass a complex of fifteen buildings, all of which have been maintained in excellent repair. Six of these are located on a parcel having lease-hold rights which expire in 1971. The balance of the buildings are located on adjoining land but for which a lease has been refused pending a future development plan for the settlement. The building complex is illustrated in Appendix J.

PLATE XVIII - The West Baffin Eskimo Co-operative Store. General merchandise is retailed through this outlet.

The Hudson's Bay Co.

This company established its first post on Dorset Island in 1911 on the site of the present settlement. It is a merchant/trading store and is in direct competition with the Consumer Division of the Eskimo Co-operative. To a limited extent, it competes also with the Producer Division of that company through its purchase of stone carvings from the Eskimos.

The Hudson's Bay Company has been, and continues to be, an important institution in the community and this will be made clearer in the chapter on the economy. There exists a good measure of co-operation between the two commercial organizations which is, in large part, due to the non-Eskimo management staffs of both.

Wage employment was first introduced into the settlement by the Hudson's Bay Company and it continues to employ a small number of Eskimos on a permanent basis. As mentioned under "Communication Systems" the Hudson's Bay Company post is the centre of radio communications available to the public.

The land on which the Hudson's Bay Company buildings are located is occupied under lease-hold rights which expire in 1970. Usually, such leases are renewed following expiry but could include modifications to the boundaries to conform to whatever plans the Territorial Government may have concerning community development. In recent years the size of the parcel has been reduced to accommodate the R.C.M.P. compound.

THE SETTLEMENT OF LAKE HARBOUR

Population

Structure

The population of Lake Harbour has structural characteristics almost identical to those of Cape Dorset where the population is nearly three times as great. At the former settlement 86.6 per cent of the population is below the age of 35 years while persons over 60 years of age account for approximately 2.1 per cent of the total. The pyramid, Figure 10, shows the population structure as at May 1967.

Three permanent camps are located within a short distance of the settlement and the population of these were merged with the settlement population in order to produce the structural pyramid. The individual camp populations are structured as follows:

TABLE 20

AGE GROUPS

Camp. No.	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
22	3	2	1	3	1	2	2	-	-	1	1	2
26	7	3	3	3	-	2	-	2	1	1	-	-
30	6	4	1	2	2	3	1	1	-	2	-	-

Total, permanent camp population - 62, or about 43.6 per cent of the total population.

Movements

N.H.H. Graburn (1963 : 3) states that the population of Lake Harbour was 140 persons in December of 1958 so it is clear that outward movement or emigration has continued to effect the settlement population. No families, however, were known to have emigrated in 1967, but near the close of field work a family of approximately 7 persons was on its way to Lake Harbour from Frobisher Bay

to take up residence. In addition, a family of 6 persons is located at Nottingham Island and its members are included in the Lake Harbour Eskimo Directory by the R.C.M.P. A second family of 7 individuals, also employed on the island and similarly recorded by the R.C.M.P., originated in Sugluk and may reasonably be expected to return there following termination of employment. Because of this, and the general uncertainty about the ultimate destination of the first family, neither figure in the population tables is contained in this report.

Population movements that might reasonably be expected to occur in the near future are in the sphere of redistribution and would not alter the total population statistics of Lake Harbour and its satellite camps. With the advent of new housing in the settlement, the chances are that the population of camps numbers 22 and 30 will relocate in the settlement. Camp number 26 is within a few minutes of the settlement, has frame housing and a small electric generating plant. For these reasons the occupants might choose to remain where they are.

The process of migration from camps to settlements is in an earlier stage of development than at Cape Dorset. This is attributable largely to the general lack of activity and facilities at Lake Harbour and the consequent absence of attraction. Change, however, is now occurring at an accelerated pace.

Vital Statistics

The period for which vital statistics are provided corresponds to that selected for Cape Dorset, i.e., 1959 through 1966. Births are assumed to be live as there was no evidence to the contrary.

TABLE 21

Marriages	Population	Births	R.P(M)	Deaths	R.P.(M)	Nat. Increase	R.P.(M)	Year
2	126	5	39	3	23	2	16	1959
-	120	7	58	3	25	4	33	1960
2	138	9	65	2	14	7	51	1961
2	133	7	52	-	0	7	52	1962
-	144	8	54	1	7	7	47	1963
-	142	3	21	1	7	2	14	1964
-	141	5	35	1	7	4	38	1965
-	144	10	70	1	7	9	63	1966

Source: R.C.M.P., Lake Harbour

For the year 1967 statistics were available to the end of June and these recorded one marriage; one death and five births.

Non-Eskimos

The non-Eskimo population to be found at Lake Harbour during the course of the survey had lived there for a period not in excess of one year and consisted of the following:

POPULATION PYRAMID
LAKE HARBOUR
MAY 1967

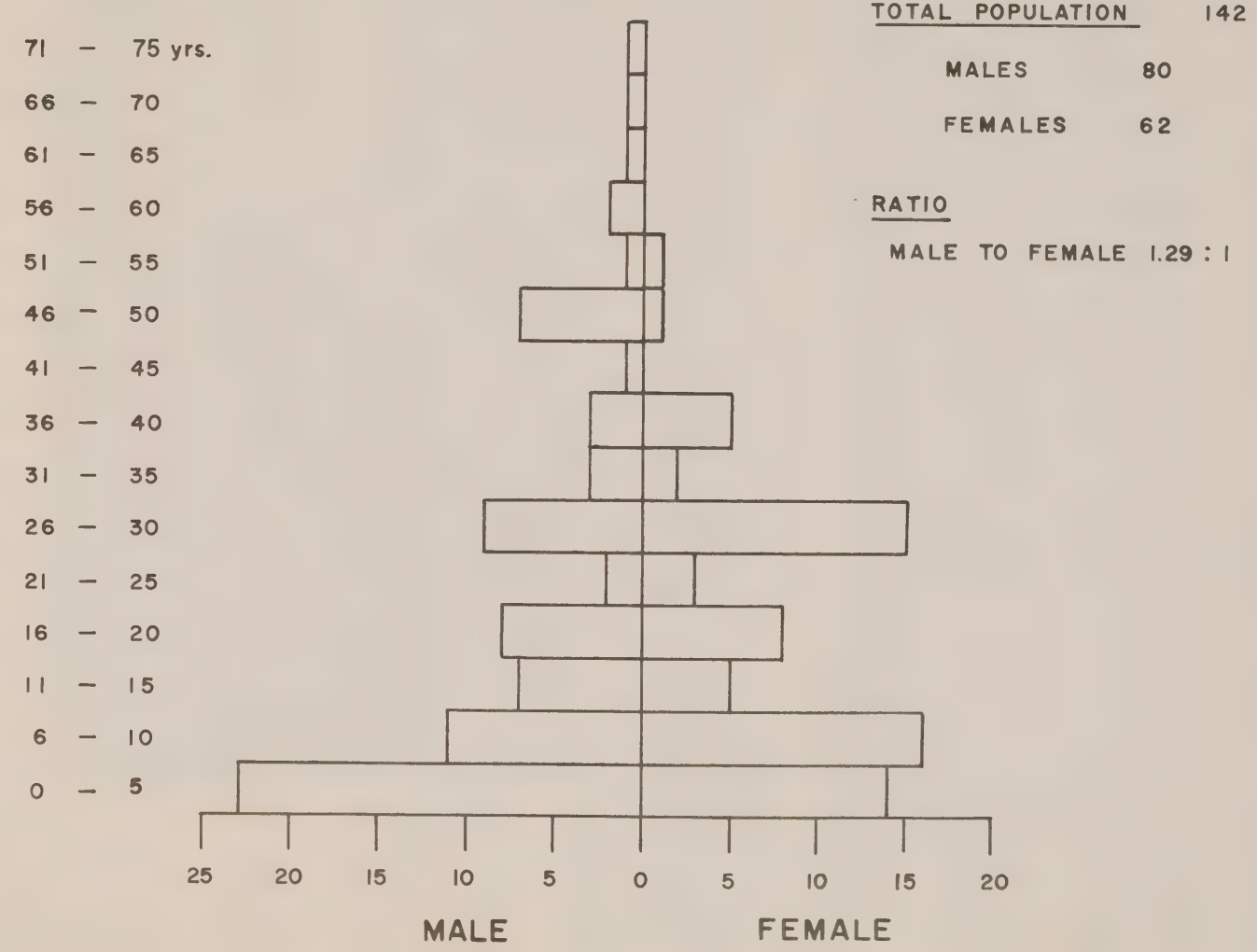


FIG. 10

TABLE 22

Occupation	Adults	Children	Total
R.C.M.P.	2	2	4
Minister	2	1	3
Teacher	2	1	3
H.B. Co.	1	-	1
Anthropologist	2	2	4
" Ass't	1	-	1
Totals	10	6	16

A construction crew consisting of a foreman and three tradesmen was also in the settlement during the late summer but was expected to leave by the end of the year.

Social Structure

Lake Harbour, unlike Cape Dorset, has not had prolonged exposure to well-established Government agencies other than the R.C.M.P., or to a larger non-Eskimo population. The community has never had a full-time Administrator, an Eskimo Co-operative, a Community Council, a recreational facility, or any of those things that lend themselves to the social development and progressive acculturation of the Eskimo families in the community.

Again, by comparison with Cape Dorset, the Lake Harbour settlement population is less than it was in some of the individual permanent camps near Cape Dorset a few years ago, so it has not been exposed to the more highly developed social structure that evolves in settlements with a greater concentration of population. Lake Harbour, in fact, is itself little more than a permanent camp and socially the community is structured very much like one.

The families are very closely knit; the youth is much more under parental control; former camp bosses wield much influence in the community. None of this is likely to undergo marked change unless the present settlement environment undergoes extensive change.

The main position of prestige was held by the R.C.M.P. special constable who was formerly a camp boss or leader. In 1967 this Eskimo retired from the position, having reached retirement age. His son qualified for the position and thus a second prestige position is created in the community because veneration for the older Eskimo might be expected to continue for many years, if not for the balance of his life.

In summation then, the social structure in the community differs little from that of the permanent camps wherein the leader gave most of the direction to social intercourse. Family ties are generally strong and, for the most part, all families are related. Parental control is emphasized, much as it is in the camps. Conditions as they exist in the community today are not conducive to a progressive development of the social structure.

The Site

Lake Harbour is located at the upper end of a drowned valley some fifteen miles from the open sea. The valley is a canyon over the greater part of its length.

The hills on either side are precipitous rising hundreds of feet ASL with the highest elevation at approximately 750 feet. The general elevation decreases to between 100-300 feet at the lower end of the valley where the hills disappear under North Bay.

The settlement occupies a hummock elevation a few feet above MSL which forms a narrow belt between the water's edge, and the confining hills that form a wall to the rear of it. There is evidence to suggest that the land upon which the settlement rests is a fault block. The terrain conditions at the site are influenced by a very irregular underlying surface of precambrian rock upon which a considerable amount of glacial till has been deposited. The site is severely restricted physically and drainage is exceptionally poor.

There is virtually no possibility of locating an aircraft landing site in the vicinity and landings on the water and ice must be considered hazardous due to the unpredictability of wind gusts caused by funnelling in the valley. Except for its suitability as an anchorage for the larger vessels, there is little to commend the site as a settlement location (See Plan Appendix B)

PLATE XIX - A view of Lake Harbour taken from an elevation at the rear of the Hudson's Bay Co. compound. The vessel Pierre Radisson is at anchor in Westbury Inlet which stretches southerly toward the horizon.

Housing

Ten Eskimo low-rental housing units conforming to the standard plans were erected in the settlement in 1967. These replaced most of the existing housing which consisted of one-room dwellings, classed generally as inadequate.

Twelve additional houses are planned for 1968 making a total of 22 new houses. It is doubtful that the settlement site could safely accommodate more than that number.

Those occupying the houses are entitled to deliveries of fuel and water under the rental agreement but the extent of the arrangements contemplated by the authorities to service the houses as specified in the tenancy agreements is not known yet.

When the houses are complete there will be available a modern unit for practically every family presently in the settlement and those presently in permanent camps on the coast. Some families such as that of the special constable, and those occupying Camp number 26, are unlikely to want to occupy the new housing.

Water

Water is drawn from a pond located on an elevation which rises some thirty feet above the general elevation of the settlement. During the summer the water is usually gravity fed through a hose to the settlement level where it can be drawn off into containers.

The pond freezes to the bottom in the winter and water is obtained by melting ice blocks cut from the pond. There is no organized system of delivery and the families look out for themselves. The teacher's residence is supplied with ice and water by the Departmental Eskimo employee who also services the school.

Sewage

Effluent is contained in the usual plastic bags and deposited in a pile on the sea ice immediately in front of the settlement. When break-up occurs the depository is carried down the inlet toward the sea and, with any luck, will not return with the incoming tide. In summer, depositories are located at convenient places away from buildings.

Fuel Oil

Fuel oil was available to the Eskimos through the Hudson's Bay Company retail outlet. The D.I.A. & N.D. had its own fuel supply for the heating of Departmental buildings, and the same applied to the R.C.M.P. and the Anglican Church.

With the advent of the new housing the importation of fuel oil by the Hudson's Bay Company will be reduced to that needed to heat its own premises, plus a small additional amount for retailing. A new bulk storage oil tank of 140,000 gallon capacity is to be installed in the settlement in 1968 and it seems likely, therefore, that some arrangement will come into being to accommodate all users from this reservoir. At least it would seem sensible that this be done.

There is no vehicular transport in the community, other than Ski-doos, for the carriage of fuel oil from the several storage locations. Most of it is hauled by this means or by hand in small containers.

Electric Power

The power source originates from two diesel-driven generators each with a capacity of 25 Kw. These are housed in a metal-sheathed building which was completed in 1967. Next year the old generators will be replaced by two units each with a capacity of 60 Kw.

A suspended, electrical distribution system, using sectional, galvanized metal poles connects all housing in the settlement, including the R.C.M.P. compound, into the power source. Major engine repairs are the responsibility of the Engineering staff at Frobisher Bay, while the responsibility for daily operating and maintenance tasks rests with an Eskimo employee residing at Lake Harbour.

At the time of the survey the settlement was not a recipient of those other services which were classed as utilities under "The Settlement of Cape Dorset".

Roads

No roads exist in the settlement, but some will be necessary and are planned for 1968. Movement is made possible by a few foot-paths which, in the immediate area of the Church and the Hudson's Bay Co., are bordered by white-washed stones. Elsewhere the foot-paths are unmarked and movement in hours of darkness is not advisable for those unaccustomed to the lay of the land.

Equipment & Maintenance Facilities

Prior to 1967 no vehicular equipment, other than one Ski-doo, belonged to the D.I.A. & N.D., the administrative authority in the settlement. In 1967 that Department transferred to Lake Harbour one D4 dozer from Churchill and a TDC 5 skid shovel from Cape Dorset. In addition, two 10 ton capacity farm wagons were placed in the settlement. These, along with the Ski-doo mentioned earlier, completes the inventory of mobile equipment in the settlement. Miscellaneous equipment consists of a motor-driven cement mixer of roughly 3 cu. ft. capacity, a modest inventory of hand tools and a few fire extinguishers.

There is no enclosed and heated facility in which to carry out repairs on the mobile and other equipment. A small tool shed is located near the power house but only repair jobs on the smallest of equipment are possible in

the confined space.

The Royal Canadian Mounted Police

In addition to exercising its responsibilities in respect to law-enforcement, the Detachment Officer has had to act as lay dispenser and render first aid when needed. This normally would be the responsibility of the D.N.H.W. but as a nurse is not stationed in the settlement it must be carried out by the R.C.M.P. The Force also acts as postmaster for the settlement.

The need for law-enforcement in the community has been very minimal due perhaps, to the less advanced acculturation processes in Lake Harbour. The behaviour of the Lake Harbour Eskimos is reputed to be exceptional when compared to that of some Eskimo communities, but it should not be construed to mean that the community is a model of over-all progress and development.

Administration

The settlement has not so far rated a full-time Administrative Officer and the task usually devolves upon the school teacher. There are obvious limitations imposed on administration by a selection of this kind because the teacher is absent from the settlement for at least two months of the year, and the teachers themselves are very often women who, although capable in their own field, are unable to undertake or direct some of the administrative tasks that are required to be done.

In actual practice, many of the tasks are assumed by the R.C.M.P. The most important of these is the determination and issue of social assistance to the needy. To do this properly requires a good knowledge of each Eskimo family and its income potential. Such knowledge is not easily acquired by teachers who undergo very nearly an annual turn-over at Lake Harbour.

Health

A nursing station used to be located in the present school building and was staffed by an employee of the D.N.H.W. The D.N.H.W. withdrew its employee in 1958 and since that time the Force has assumed the role of lay dispenser to the community. It is authorized to issue drugs, give certain innoculations, and render first aid when required. Serious medical cases are transported to the hospital at Frobisher Bay, when it is possible for aircraft to approach and land near the settlement.

The recapitulation of services rendered during the year 1966, and for part of the year 1967 is given in Table 23 following:

TABLE 23

Medical Services Provided at Lake Harbour

1966

By R.C.M.P. Detachment

Month	Referred to Doctor	Evac-uated	Injury	Chest Heart	Gastro Intest.	Ear Nose Throat	Skin	Influ.	Other	Total Hours
Jan	6	-	7	9	-	32	5	78	-	78½
Feb	2	1	-	17	4	4	5	-	4	43½
Mar	6	3	6	-	-	3	3	-	-	42
Apr	4	3	-	38	-	11	4	135	-	91½
May	4	1	9	4	-	4	3	4	-	52
June	3	-	3	10	1	1	-	3	-	58½
July	1	2	5	10	-	-	6	7	-	34
Aug	2	1	-	2	1	-	3	-	-	13½
Sept	4	1	1	3	-	13	3	-	1	14½
Oct	4	-	-	5	12	-	-	5	1	55
Nov	9	3	-	2	24	-	-	-	2	28½
Dec	3	2	5	3	3	8	8	-	1	55
Total	48	17	36	103	42	76	40	232	9	556½

Persons treated at RCMP Office 1966 -- 43 1967 -- 120 (up to and including July)

Treatments given at office	" -- 156	" -- 150	"	
Homes visited	" -- 1087	" -- 145	"	
Persons treated at homes	" -- 471	" -- 156	"	

Religion

As in Cape Dorset, all Eskimos in the community are Anglican. A Mission was established in the settlement as early as 1909 and was visited during the summer by a Missionary who covered the Cape Dorset area as well. The Rev. Canon M. Gardener, the Minister at Cape Dorset, occupied the premises at Lake Harbour fairly continuously for the period 1957 through 1960 at which time he moved to Cape Dorset. A resident Minister was absent from the Church premises until 1967 when the Rev. Canon T.E. Daulby arrived with his family to take up residence.

PLATE XX - The Anglican Church at Lake Harbour

The present Church was built in 1948 and it, along with auxillary buildings, are well maintained. The Minister carries on a regular Church program and is also involved in the translation of a part of the Old Testament directly from Hebrew into the Eskimo syllabics. The religious processes are carried on at the outlying camps by Eskimo Catechists trained by the Church.

Education

A Federal Day School began operating in Lake Harbour in 1963 when a teacher was placed there by the D.I.A. & N.D. In previous years, education was limited to teaching at the Mission and by a few summer teachers who remained in the settlement for short periods. The old nursing station building was, and still is, used as the single classroom.

PLATE XXI - The Federal Day School at Lake Harbour

It would be too early to reach any solid conclusions regarding the progress that has been made through education at Lake Harbour but few Eskimos in the community have gained conversational fluency in English so far.

Classroom capacity is 19 but is to be augmented by a new school building with two classrooms in 1968-69. Some appreciation of the level of school activity may be gained from the table showing school activity.

TABLE 24

SCHOOL ACTIVITY

Year	Pupils Reg'd	Class-room Capacity	Attendance Distribution by grades								No. of Teachers
			AU	1	2	3	4	5	6	7	
1963	14	19	-	12			1	1			1
1964	16	19		11	4			1			1
1965	26	19		21	4		1				1
1966	20	19		7	7	4	1	1			1
1967	26	19		12	8	1	4		1		1

Source: Department of Indian Affairs & Northern Development, Ottawa

The population pyramid for Lake Harbour shows a total of 37 children in the age group 0-5 years which will have a bearing on future classroom capacity. The details relative to this age group are given below:

	Male	Female	
In the first year	11	3	
In second year	4	2	
In third year	2	1	
In fourth year	3	4	
In fifth year	3	4	
	23	14	37

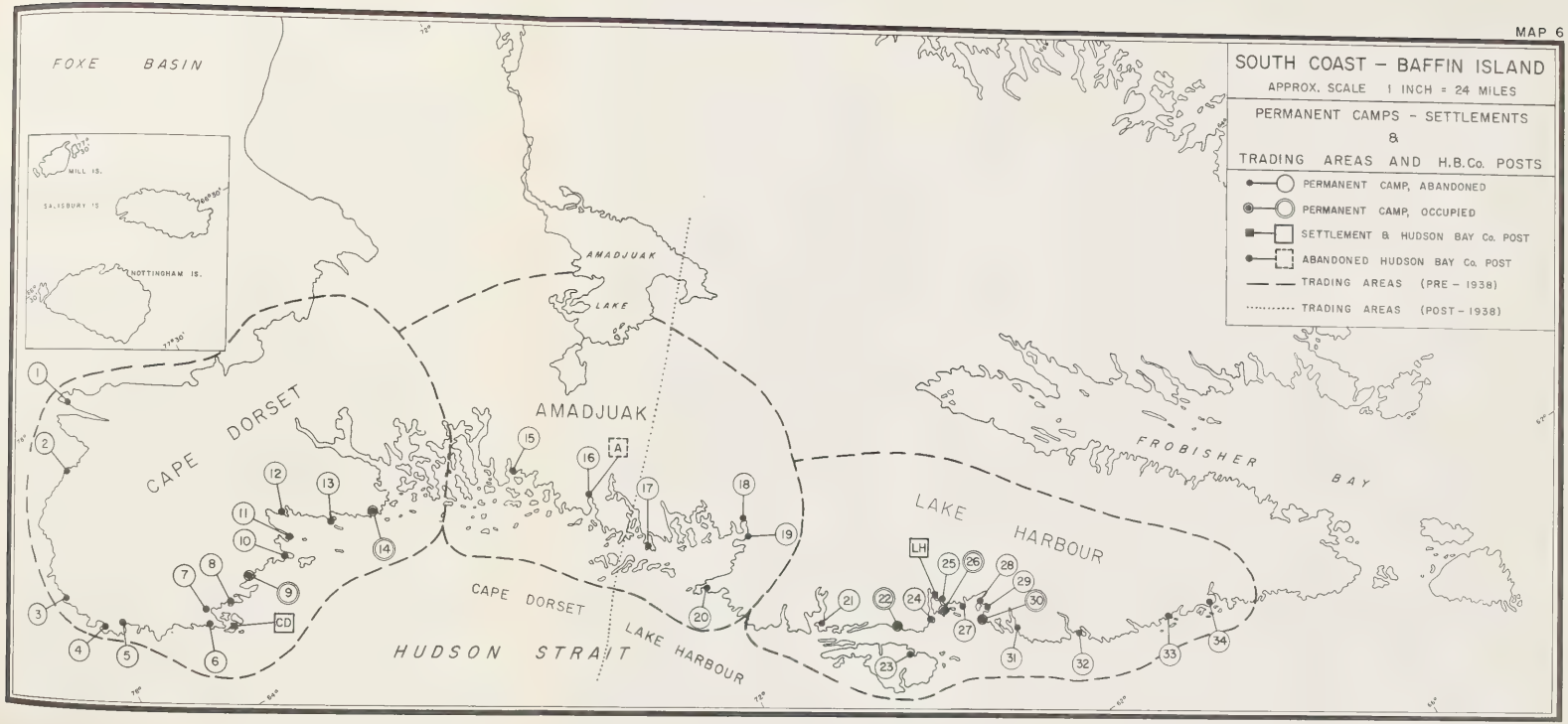
Only one member of the community was to be sent on a vocational course at the end of 1967, a male Eskimo destined for Esquimalt, B.C., where training in power plant operation would be given for a six-month period, January 1968 through May.

The Hudson's Bay Company Limited

The company established a post at Lake Harbour in 1911 and it has been in continuous operation since then. The post became the focal point of a trading area which is treated at greater length in the chapter on economy.

The store operated by the Hudson's Bay Co. probably more than anything else, allows the continuation of the settlement and prevents a general break-up and dispersal of the population to other localities.

In 1967 it was managed by a single non-Eskimo employee of the Hudson's Bay Co. and, in addition, gave employment to a few local Eskimos. Radio communications available to the general public are operated by the post manager.


SOUTH COAST – BAFFIN ISLAND
APPROX. SCALE 1 INCH = 24 MILES
PERMANENT CAMPS – SETTLEMENTS
&
TRADING AREAS AND H.B.Co. POSTS
PERMANENT CAMP, ABANDONED
PERMANENT CAMP, OCCUPIED
SETTLEMENT & HUDSON BAY Co. POST
ABANDONED HUDSON BAY Co. POST
TRADING AREAS (PRE – 1938)
TRADING AREAS (POST – 1938)
FOXE BASIN
MILL IS.
SALISBURY IS
NOTTINGHAM IS.
AMADJUAK
LAKE
CAPE DORSET
AMADJUAK
FROBISHER
BAY
LAKE
HARBOUR
CAPE DORSET
LAKE HARBOUR
HUDSON STRAIT
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CHAPTER 6

THE ECONOMY

INTRODUCTION

The treatment of the economy was based on approximately three months of field work, supplemented by the researching of existing reports and records that may have contained information pertinent to the survey area.

After perusing the reports and assorted written material that were available, it was decided that the most useful contribution this survey could make relative to the economy would be to select a twelve-month period and endeavour to reveal the present level and functioning of the economy.

Where possible, an attempt has been made to frame the period selected within a greater time unit of several years. On the whole, however, it was found that the time required to assemble and research back records at a community level could not be justified for a general report such as this one. This facet of the economy is, therefore, less complete than desired.

The specimen, twelve-month period selected falls between May 1, 1966, and April 30, 1967. It does not coincide with the fiscal year of any institution, Government or private, that has business in the survey area. From the standpoint of the report, however, it presented itself as the latest period for which reasonably complete records were available.

In researching data for the period, the survey was confronted by a multiplicity of methods for the recording of financial and related data; a variety of fiscal years and not a few information gaps. For these reasons, the figures that appear in respect to community and family incomes should not be deemed complete or definitive. On the other hand, they constitute the best available compilations and do not detract seriously from the objectives stressed in the second paragraph above.

The report treats the economy of the area in the following manner:

PART 1 - Consists of an outline of the evolution of the economy as interpreted by the survey.

PART 2 - Discusses the economy of Cape Dorset.

PART 3 - Discusses the economy of Lake Harbour. It will include, as well, a brief mention of Nottingham Island where two Eskimo families are employed by the Department of Transport.

INCOME - Income, as used in the text, relates to Eskimo income only. It is difficult to ascertain what percentage of the whites' income might devolve upon the Eskimos, but it is thought to be negligible in the total Eskimo income.

GROSS COMMUNITY INCOME - Refers to community income from all origins and sources before deductions are made for trade and freight accounts outside the community, and for corporate income taxes. It concerns especially the W.B.E.C.

GROSS FAMILY INCOME - Refers to Eskimo family income before deductions for personal income taxes and old age security.

PART 1

EVOLUTION OF THE ECONOMY

For the purposes of this survey the evolution of the economy has been divided into three more or less distinct periods, the differentiation of which has been hinged on the appearance of certain institutions in the area. The periods are designated subsistence, trading and wage/marketing, and the institutions concerned are the Hudson's Bay Company, the Federal Government, and the Arctic Co-operatives.

It is true, of course, that considerable overlap occurs in the transition from one period to the next. The wage period had small beginnings prior to the appearance of the Federal Government and Arctic Co-operatives on the scene; and only a small amount of trading was carried on with the whalers before the Hudson's Bay Company appeared in the area. Nevertheless, it appears that these institutions were the real focal points in the evolution of the economy.

The Subsistence Period

The only interruption of economic consequence in this period of undetermined duration occurred when the whalers were active in the Hudson Strait in the nineteenth century. There is visual evidence at Lake Harbour attesting to the earlier presence of whalers in the area.

A.P. Low (1903-04, 252) seems to be talking about Lake Harbour as a whaling station when he notes that the Scottish whaling steamer "Active" made annual voyages to Hudson Bay and established a station on the north side of Hudson Strait. He mentions also that the "Active" was in the habit of picking up Eskimo help near Big Island.

Whalers were not traders in the strict sense but some trading did take place and it was by this means that the Eskimo was introduced to firearms. The rifle was a big departure from the weapons which Eskimos were accustomed to using, and enabled them to hunt surely and at a long range.

The quantity of rifles acquired at the time must have been exceedingly small and, therefore, of benefit to a very few families. It is certain, however, that the Eskimo immediately realized their potential. An interesting observation was made to that effect by David Moore Lindsay while serving with the whaler "Aurora" in Davis Strait: "These improvident people with modern rifles would kill all the game they could shoot, use what they required at the time and waste the rest, whereas in old times

they just secured enough for their wants." Since the time Lindsay found reason to make such a statement the Eskimo deserves a less severe judgement, but even today the tendency described by Lindsay has not completely vanished.

From all accounts, the rifle, and to a lesser extent the whale boat, was about the only tool of significant economic value left behind by the whalers. On the other hand, however, whaler crews have been blamed for the alleged sometimes disastrous spread of disease among Eskimo populations during these earlier times.

Throughout the subsistence period the continued existence of the Eskimos was dependent directly upon hunting. Marine mammals and some land mammals were the indirect sources of heat and light and the sources of food and clothing. As well, their skeletal parts were fashioned into weapons and a variety of other instruments necessary to survival.

The availability of mammals exerted a profound influence on the economic organization of the Eskimos, causing them to locate in small groups at widely separated points along the coast in order to ensure a continuing supply of the mammal resource within a manageable operating distance.

For the most part, the constant movement of these small groups from site to site can be directly related to a decrease in the availability of marine mammals. This becomes clearer in later times when the pattern is discernable in recorded data and through conversation with old Eskimos The very numerous old camp sites along the coast further attests to this circumstance.

Because most Eskimos were specialists in the harvesting of one principal resource, it is doubtful that economic exchange of any account took place. Another resource, soapstone, was an important mineral in the life of the Eskimo and was used to make the lamps for light and cooking. Soapstone occurred at some Eskimo camps and not at others, but apparently did not find use as an item of barter. As pointed out by Meyer (1932,174) regarding the Caribou Eskimos - "The first and most important rule with regard to the resources of the land is that no one, either community or individual, may lay claim to any particular hunting territory; wood, soapstone, etc. occupy the same position as game". Within this framework barter would hardly flourish; an Eskimo would simply take what he needed.

Following the turn of the century, the Hudson's Bay Company, long active in fur trading on the mainland, began to look to the south coast of Baffin Island as a source of fur from the white fox.

The actual entry of the company into the area, in the context of this report, marked the termination of the subsistence period. Needless to say, subsistence conditions existed for a good deal longer and were fairly widespread a few years ago.

The Trading Period

The presence of the Hudson's Bay Company in the area brought about a change of comparatively major proportions in the economic orientation of the Eskimo. Within the space of a few years the Hudson's Bay Co. established three well-placed posts along the south coast.

The first of these appeared at the present site of Lake Harbour in 1911; the second at Cape Dorset in 1913, and the third at the now abandoned site of Amadjuak in 1921.

The establishment of the posts signalled the development of "trading areas" each with a post as its nucleus. These are depicted in map 6 which shows the excellent distribution of the posts and their attendant trading areas in relation to the coastal region of interest.

The existence of trading areas signalled a substantial advance in economic organization over the subsistence period for a number of reasons. Firstly, great emphasis was placed on trapping the white fox in large numbers; secondly, traps, rifles and other kinds of harvesting equipment became available to the Eskimos on a comparatively large scale as items of trade; and lastly, trading areas constituted relatively large economic units composed of numerous small groups of people trading into a common location with a hitherto unknown degree of regularity.

Much of the period history surrounding these important developments is contained in the diaries and annual reports of post managers of the times which, unfortunately, rest in the archives of the Hudson's Bay Co., London, England. In researching data pertinent to the trading period the survey relies heavily on verbal communications from former employees of the Hudson's Bay Co familiar with the area and, presently, members of the D.I.A. & N.D.,[1] and a few of the older members of the Eskimo communities.

The functioning of the economy in this setting was dependent primarily on the Eskimos being dispersed along the coastline to obtain a better spread of trap lines trending inland from the coast, and to minimize local pressure on country food sources. The Eskimos were discouraged from settling near the post and were frequently grubstaked by the Hudson's Bay Co. as an inducement to remain in camps.

The post managers carried inducement much further by issuing relief to Eskimos found destitute, and by encouraging and aiding in the movement of families from old to new locations along the coast in instances where trapping and country food supply had diminished.

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[1] Messrs. R.B. Tinling and C.R. Russell, Arctic District, Northern Administration Branch, D.I.A. & N.D.

[2] Simmiyounik and Petolassie. The Rev. Canon M. Gardener acted as interpreter.

There is little reason to doubt that much of the motive of the Hudson's Bay Co. was humanitarian in its concern for the Eskimos' well being, but at the same time it was acting as any astute business organization would in the circumstances - protecting its productive resources.

Seals, which were to attain some importance in the trading and cash economies after the last war, were purchased in large numbers from the Eskimos by the Hudson's Bay Co. for caching as dog food for the coming trapping season. Skins were of little trade or cash value. The seal meat was augmented by the meat of up to 150 walruses annually, all of which was distributed free of charge to the trappers throughout the appropriate season.

The entire economy was geared to fox trapping and it is of interest to note in passing that the Hudson's Bay Co. insisted on whole carcasses being brought to the post so that skinning could be done under the supervision of the post manager. Only as the Eskimo gained in experience was he able to conclude a transaction without the carcass. The handicap imposed on a hunter having to transport whole carcasses over these substantial distances must have, indeed, brought about a willingness to learn quickly.

In 1938 the Hudson's Bay Co. closed its Amadjuak post which was the centre of trading for that sector of the coastal belt from Chorbak Inlet to the east side of Markham Bay. The remaining two trading areas were subsequently modified to accommodate the trade with the Eskimos formerly associated with Amadjuak. This event undoubtedly initiated the gravitation of the coastal population toward Cape Dorset and Lake Harbour.

All trade between the Hudson's Bay Co. and the Eskimos was transacted through the medium of tokens redeemable in merchandise, and cash rarely, if ever, changed hands. Cash began replacing tokens at Cape Dorset in 1940 and by the end of the decade tokens had all but disappeared from the scene. At Lake Harbour, on the other hand, tokens were in use as late as 1948.

Impetus was given to hunting immediately following the close of the last war when a demand for sealskins developed. This brought about a useful broadening of the economic base which persists to the present day.

In 1950 only seven wage employment positions existed for Eskimos in the survey area. Three of them rested with the Government and four with the Hudson's Bay Co. The Government requirement called for a school janitor and an assistant for the welfare teacher, and a field assistant for a party working in the area. The wages paid were in the range of twenty to thirty dollars per month with a ration allowance. The Hudson's Bay Co. requirement was for Eskimo clerks and general help in and around the post. The wages paid ranged from twenty to sixty-five dollars per month plus rations.

The decade 1950 brought with it many significant changes in the Eskimos' economy and with it a marked orientation toward functions differing from the pursuits of trapping and hunting. Small construction projects in

housing and Government plant were undertaken, and what was to be a very significant economic development for the Cape Dorset Eskimos, at least, began to take shape in the field of arts and caafts.

A Northern Service Officer, J. Houston, was instrumental in the early development of Eskimo arts and crafts into an industry and his successor, T.P. Ryan, is largely responsible for its subsequent development.

A conflict of interest, but not a serious one, developed between the traditional trader, the Hudson's Bay Co., and those concerned with the development of arts and crafts. The Hudson's Bay Co.'s main purpose was the acquisition of skins and furs through trade and, in order to accomplish this, it was essential during those times that the Eskimos remain along the coast and not around the post. Rising wage labour opportunity and the development of Eskimo industry of the kind mentioned, on the other hand, tended to attract the Eskimos to the post, or what now might better be called the settlement area.

The trend pattern, however, had been set and was firmly established by the formation of an Eskimo co-operative organization which received its charter in 1960. Loans made available to the Eskimos for capital formation made this important development possible.

It is appropriate to terminate the "trading period" at this juncture. In summary, the period was one of progressive development from an economy at or near subsistence level and based solely on trapping. This was followed by the addition of seal hunting whereby skins were obtained for trading purposes. Tokens were used as a medium of trade and were gradually replaced by cash which gave the Eskimo greater latitude in his purchases. Towards the end of the period, wage labour opportunities were on the increase and Eskimo enterprise in arts and crafts began to figure in the economy. Family Allowances were made payable during this period, as were other benefits through Social Legislation. In spite of these improvements, however, real hardship and subsistence conditions were never totally absent in the Eskimo economy of the time.

Wage/Marketing Period

The formation of the Eskimo Co-operative at Cape Dorset signalled an evolutionary economic event of considerable importance because, for the first time in the area, the Eskimos became employers with full responsibility for decision making affecting the wage, development and management policies of a business organization. They became, in fact, business men in the western sense.

Government,too, was making substantial contributions to the evolving economy through its several construction projects encompassing the erection of Eskimo housing, warehousing and the introduction of utilities. Construction included, as well, a Federal Day School and a Nursing Station in Cape Dorset. This kind of government activity brought about a tremendously increased

amount of freight movement by sea. Air transport also increased significantly in the number of flights and the passenger and air freight traffic handled. Wage employment, generally, improved and more and more Eskimos were becoming accustomed to this pursuit as a source of income.

With a rising amount of cash becoming available, the Eskimos began to avail themselves of merchandise in an unprecedented way through the local Hudson's Bay Co. post, the W.B.E.C. and directly from southern suppliers. Very few Eskimo families today are without equipment such as canoes, outboard motors, ski-doos and assorted fire-arms and ammunition. They have, as well, become relatively large consumers of western-type foods and clothing.

This acquisition makes it possible for settlement residents to operate at much greater distances with greater economy in time and expense while trapping and hunting than was hitherto possible from such locations. The obvious advantages of basing in the settlement were not lost on the Eskimo because, as pointed out elsewhere in this report, permanent camps are becoming progressively fewer with each passing year.

Many differences between Cape Dorset and Lake Harbour will have become evident in the discussion on the settlements and permanent camps in Chapter 5 of this report, and it follows therefore that the evolution of the economy has proceeded at a much slower pace in the latter settlement than in the former. The most important element in the Eskimo economy, the Eskimo co-operative, to which the survey ties the commencement of the wage-marketing period, is missing at Lake Harbour and the Eskimos there continue to look upon the Hudson's Bay Co. as the principal centre of economic activity.

Small construction projects under the auspices of the Government augment the income from wage labour pursuits from time to time but the Eskimos of Lake Harbour perforce remain very much trapping and hunting oriented. The carvings in stone and ivory that are made in the settlement are purchased chiefly by the Hudson's Bay Co. and to a lesser extent by private individuals. The settlement is far less able to carry itself through periods of unfavourable price fluctuation which seems to plague the markets for skins and furs.

In summary, the advances made in the economy during the wage-marketing period have been quite phenomenal, as will be brought to light in parts 2 and 3 of this chapter. The Eskimo has been brought closer to a full cash economy at a greatly accelerated rate since 1960 and has come to depend almost wholly upon western-type implements and southern markets for his livelihood. Cape Dorset is the economic growth centre of the area, and for reasons that appear clear, will likely remain so. The evolution of the economy in that settlement has not been without its trials but with good guidance and a high level of industriousness, it has become what surely must be a leading Eskimo community. An economic diary compiled from

excerpts of Northern Service Officers' reports is included in Appendix F of this report. It sheds a good deal of light on the swings in economy in the earlier part of the present decade.

Lake Harbour, through a combination of unfavourable circumstances, may at the present time be likened in many respects to Cape Dorset just prior to 1960. Although the former settlement enjoys many of the material things found in Cape Dorset it lacks severely in the kind of economic organization that is necessary to growth.

In the preceeding outline the survey has attempted, however inadequately, to discuss the major developments leading up to the present-day status of the area economy, to which parts 2 and 3 of this chapter are devoted.

General Economic Considerations

Before dealing with income proper, it would be useful to examine a few economic factors peculiar to the far north and its indigenous peoples. The intention for doing this is to place the Eskimos' actual income into proper perspective relative to real income.

The report does not attempt to arrive at the measure of real income by the imputation of equalizing values in respect to the factors discussed below. Formulae exist or can be arrived at for doing this and any attempt to employ them is left to those for whom the results are of special interest.

Eskimo Housing

In 1965 the Department set up a five-year rental program under which housing units would be made available to Eskimos on a low-rental basis. Houses which were made available under an earlier purchase plan were repurchased by the Department for the amount of the Eskimo's equity less 2 per cent of the original value of the house to cover depreciation. The 2 per cent was applied against each year of occupancy.

Rents are based on a formula established by the CMHC for crown-owned housing in the north and from this, three categories have evolved for the determination of rent. These are:

a) Permanently employed individuals will pay a rental equivalent to 20 per cent of the family income to a maximum rent of $804, or $67 per month.

b) Those in receipt of social assistance, old age pensions, disability pensions, and those unemployed due to poor economic conditions, will pay a minimum of $2.00 per month.

c) This category covers all those individuals who cannot be placed in either of the preceding categories. Included would be hunters, part-time employees and others with no valid reason for not working. The determination of rent involves an estimate of income in advance. There is machinery for the write-off or carry-over of rents in arrears.

Included in the rent of each housing unit is the provision of 1,890 gallons of fuel oil for heating and cooking, 1,921 KWH of electricity, potable water, and garbage and sewage collection services.

Twenty-five such units were placed in Cape Dorset during the year 1966-67 with occupancy in December 1966. An additional 24 were under construction while the survey was in progress and were to be occupied by December 1967. The older houses repurchased by the Department were rented back to the Eskimos pending erection of the newer ones. The payment of rent appears to have begun in January 1967.

Consumption & Value of Country Food

The Eskimos of the survey area, and for that matter all Eskimos of the Arctic Archipelago, rely upon seals and caribou as their sources of fresh meat. In addition, quantities of fish, and bird eggs are taken for consumption.

The availability of country food is a very important economic factor in the life of the Eskimo which is not reflected in this treatment of his income. The Eskimos themselves are unable to give a reliable estimate of the quantities consumed during the course of a year and the reports of observers show a wide range of consumption amounts based on short periods of observation. E.M. Meyer (1932, 56) in referring to the observations of Dr. Anderson, Middleton Smith and Meckings, shows a range of from eight pounds in one day to fifteen pounds in one half day. It is likely, however, that a full study would reveal the consumption of country food on an average to be in the order of one to two pounds per day per person.

Similarly, the monetary value of country food can vary depending upon the area and the quality of the data available to the observer. In the reference paper "The Northwest Territories Today" (1965:53) the estimated value of country food is placed at between $200 - $300 per capita. This would vary with the settlement but appears to be a reasonable evaluation.

Credit and Loan Facilities

Credit facilities are available to the Eskimo on an informal basis through the Hudson's Bay Co. and the W.B.E.C. stores. Credit extended by the Hudson's Bay Co. store at Cape Dorset was at about $6,000 in the summer of 1967, and was being added and retired at the rate of approximately $500 each month. Credit extended by the W.B.E.C. was lower at roughly $3,000 during the same period. Expensive items such as canoes, ski-doos, outboard motors, etc., are sold by the Hudson's Bay Co. on the basis of 75% in cash and the balance at $30 or $40 per month.

The Government extends loan privileges to the Eskimos at reasonable rates of interest and with low security requirements. These loans generally are made for the betterment of the Eskimos' economic circumstances and may be outlined as follows:

The Eskimo Loan Fund - Very briefly, the Fund permits loans to be made to individuals or groups of Eskimos in amounts ranging up to $10,000 for an individual; $15,000 to a group of two to four, and up to $50,000 to a group of more than four. The purpose of the loans can range through the purchase of tools and materials for a small business; the construction, purchase or repair of buildings and machinery; the purchase of food and camping supplies; the formation of a co-operative association; and the purchase or construction of low-cost housing (under revision). Loans are repaid, together with interest of 5% per annum on the unpaid balance, within five to ten years.

Eskimo Small Boats Assistance - The Eskimo, or a group of Eskimos, may acquire boats to be used in hunting or fishing on the basis of a 20% equity augmented by a 40% grant and 40% Eskimo Loan based on the landed price of the vessel. The maximum allowable grant is $9000 which would place the value of the vessel at roughly $23,000. Vessels of higher price could be purchased only by an increase in the Eskimo's equity. The loan part of the transaction is repayable as provided by the Eskimo Loan Fund.

PART 11

THE ECONOMY OF CAPE DORSET

The level of Capital Investment

It would seem appropriate first of all to provide some appreciation of the level of capital investment existing in Cape Dorset, and later in Lake Harbour, before launching into the more detailed investigation of the income facet of the economy.

Wherever possible the sources of monetary information will be identified but it should be emphasized that, in studies of this kind, considerable estimating is mandatory if anything nearly useful is to be produced. Such estimates as are made, however, are usually based upon skeletal data which makes it possible to produce sums which, on the whole, are very close to those actually involved. This qualification may be justifiably applied to all other sums appearing in the discussion on economy where it is indicated that such sums have been derived through estimation.

The origin of major capital investment lies with the Government; particularly the Dept. of I.A. & N.D. Other Government Departments which have investment in the settlement are the Dept. of N.H. & W., and the Royal Canadian Mounted Police under the Solicitor General's Department.

Capital investment in the private sector is divided into three categories, namely, commercial - represented by the W.B.E.C. and Hudson's Bay Co.; religious - represented by the Anglican Church and, lastly, the Eskimo families themselves.

The resumé of investment included in this discussion covers capital investment introduced by the Dept. of I.A. & N.D. in five-year periods commencing in 1950. A final figure is shown under 1967 which represents the capital value assigned to all previous investment existing in the settlement at the end of that year, and owned by the Department. The figure must be considered somewhat lower than actual. Where other Departments or Agencies of the Government are concerned, the value assigned at the end of 1967 will be the only one that appears.

With the exceptions of the W.B.E.C. and the Eskimo families, capital investment is, for the most part, of the non-productive kind and is taken up by accommodations, warehousing, maintenance equipment for roads, equipment for house servicing and those other things that make the settlement habitable. A large part of the investment of the W.B.E.C. and the families is naturally devoted to buildings and equipment used for income generating pursuits.

Resumé of Capital Investment

Government

Year and Agency	Amount	Purpose	Total Value Assigned
D.I.A. & N.D. (Source: D.I.A. & N.D. & Survey Estimate)			
1950-55	$ 69,000	Buildings	
1956-1960	180,000	Bldg's & Equip.	
1961-1965	960,000	Bldg's & Equip.	
1966-1967	829,000	Bldg's & Equip.	
1967			$1,988,000
D.N.H.W. (Source: D.N.H.W.)			$ 90,000
1967			
R.C.M.P. (Source: R.C.M.P., H.Q.)			
1967	Buildings, Radio & Small Equipment		$ 53,000
Total Value Assigned, 1967			$2,231,000

Private

The West Baffin Eskimo Co-operative - Being a private commercial concern, much of the financial data pertinent to this entry is unavailable for publication. The capital value of fixed investment assigned to 1967 is, therefore, largely a survey estimate based upon the number and condition of the buildings comprising the complex illustrated in Appendix J and a knowledge of the fixtures and equipment owned by it.

W.B.E.C. (Source: Survey Estimate 1967)

1967	Buildings, fixtures & equipment	$ 115,000

The Hudson's Bay Company - The same qualifications that apply to the W.B.E.C. apply equally to this commercial concern. Apart from buildings, fixtures and equipment, this company owns a large Peterhead vessel the value of which is included with the other items noted above.

Hudson's Bay Company (Source: Survey Estimate 1967)

1967	Buildings, fixtures, equipment & vessel	$ 103,000

The Bell Telephone Co. Ltd.- Under communication systems the installations belonging to this company in the settlement were described in some detail. Nothing needs to be added except the company's valuation of its investment.

Bell Telephone Co. (Source: Bell Telephone Co. Ltd., Quebec, P.Q.)

1967	Telephone and radio installations	$ 40,000

The Anglican Church Establishment - The Church is of frame construction and underwent some structural modifications in 1967. In addition to that building are the Minister's residence, the old Mission School building and a small warehouse.

Anglican Church (Source: Survey Estimates 1967)

1967	Buildings and Fixtures	$ 65,000

Eskimo - The presentation of Eskimo investment is, for all intents and purposes, limited to vehicular and other equipment necessary for the harvesting of natural resources, and which more closely fit the concept of capital investment where these people are concerned. Almost without exception there is no Eskimo real property the value of which can be assigned by title to individuals. Some houses were owned by Eskimos but, as mentioned elsewhere, their equity in these was purchased by the Government to make way for the low rental housing. The ownership of a large community building is vested in the Eskimo community and this, along with the W.B.E.C.are cases of Eskimo equity as recorded in the resumé to follow:

Eskimo (Source: Survey Estimate 1967)

1967	Harvesting Equipment	$ 182,112

Vessels	Canoes	Outboard Motors	Ski-doos	Traps	Rifles Guns	Binoc-ulars	Sleep. Bags	Tents
8	43	47	55	2,626	212	34	42	40
$66,000	$25,800	$19,150	$49,500	2,626	13,500	1,360	2,940	1,600

NOTE; Values are based on current replacement costs

Community Hall - building 27' x 73' $ 50,000

Recapitulation

The following data emerge from a recapitulation of investment values assigned to the year 1947:

	TOTAL INVESTMENT BY SOURCE	Per Capita Distribution (pop. 484)
Government	$2,131,000	$4,610
Private		
- H.B. Co.	103,000	313
- Bell Telephone Co. Ltd.	40,000	83
- Anglican Church	65,000	134
Eskimo		
- Harvesting equipment and equity in the W.B.E.C. and the Community Building	347,112	713

Projected Capital Investment

Some mention should be made of the additional investment contemplated by the D.I.A. & N.D. over the next five years. It should also be made clear that projections made over a term of that many years are subject to modifications as to the kind and quantity of construction, as well as to the capital costs that are estimated to be involved.

1968 to 1973	- 3 Classrooms and a Gymnasium	$ 210,000
	- 5 Staff Houses	150,000
	- 1 Bulk Oil Storage Tank (140,000 gal.)	93,000
	Total	$453,000

There is a possibility that a private concern will take over the provision of fuels in this and other areas in the Archipelago, in which case the cost of the storage tank noted above with those already installed would be transferred from the Government to the private sector of investment.

Annual Levels of Gross Community Income

The discussion on the evolution of the economy has shown that, for a number of years, community income has been derived from several sources, i.e., wages, handicrafts, trapping and hunting, and welfare and social legislation. The community income from these sources is depicted in Table 25 over a five-year period. For the reasons given earlier, the sums given in the table are not precise. They are, however, tolerably close and may be judged adequate to satisfy the purposes mentioned in the opening paragraphs of this chapter.

TABLE 25

GROSS COMMUNITY INCOME

Year	Wages	Arts & Crafts	Trapping & Hunting	W.P. & S.L.	Total
1962/63	29,000	38,000	22,000	22,000(PE)	111,000
1963/64	10,000 (Part)	28,000	98,000	25,000(PE)	161,000
1964/65	25,000	49,000	70,000	28,000(PE)	172,000
1965/66	40,000	124,000	17,000	36,000	217,000
1966/67	153,000	158,000	38,000	43,000	385,000

(PE) - Partially estimated by the survey and the D.I.A. & N.D.

W.P. & S.L. - Welfare payments and social legislation

Sources: D.I.A. & N.D., D.N.H.W., R.C.M.P., W.B.E.C., C.A.P., H.B.Co.

The growth in the economy as reflected by the gross community income is substantial, having undergone an average increase annually of 47% since 1962/63. The greatest increase was registered in 1966/67 which amounted to nearly 77 per cent over the previous year.

The cyclic nature of the fox harvest is evident in the table which indicates a peak in 1963/64, with the lowest yield being reached in 1965/66. Studies have shown a roughly three-year cycling in fox populations. Income from trapping should, therefore, tend to improve during the coming two years. To offset this gain, however, there will probably be a decrease in income from hunting due to a decline in the market for sealskins evident in 1967.

Distribution of Gross Family Income

In constructing its table depicting the distribution of income, the survey examined all records kept by the several agencies concerned with wage employment, on a monthly basis. Handicrafts, trapping and hunting were approached in much the same way. Trapping and hunting income, which is recorded in terms of purchases by the Hudson's Bay Co. in the fur and skin returns of the N.W.T., carried insufficient data for reference to the Eskimos involved. The company did, however, provide the survey with an arbitrary number of skins and furs traded with a listing of the hunters and the proportion each could be expected to take. This apportioning was arrived at through many years of close association with the hunters and must be considered equitable. Through an extrapolation of these data and actual takes for the period, a distribution of the resultant income to families was made. It was not possible to do this in certain instances involving wages and carvings; such sums, therefore, appear as undistributed income.

Welfare statistics on a case basis were not available at either Cape Dorset or Frobisher Bay so the survey examined at Ottawa all the invoices issued to the D.I.A. & N.D. by the Hudson's Bay Co. and the W.B.E.C. in respect of welfare. The table shows that $7,200 could not be specifically distributed over the recipient families.

Family allowances were arrived at by a determination of eligibility dates from birth dates of children as indicated on the latest Eskimo Directory. Payments in respect of social legislation were obtained from the D.I.A. & N.D. at Ottawa. The initial tabulation of all income data was done on an individual basis, monthly, and the individuals were assembled subsequently into family units according to the family grouping appearing in the Eskimo Directory compiled by the R.C.M.P. With a few minor exceptions, the composition of the families, as to numbers of individuals in each, indicate a common dwelling.

TABLE 26

DISTRIBUTION OF GROSS FAMILY INCOME

CAPE DORSET

Specimen Period 1 May, 1966 to 30 April, 1967

FMLY NO.	PER-SONS	WAGES & MISC. CONST.	OTHER	ARTS & CRAFTS CARVING DRW'G	SEWING	HUNTING	WELFARE PAYMENTS	SOCIAL LEGISLA-TION	TOTAL	
1	6	1,805	286	529	90	36	356	336	3,438	
2	1			59	211		330		600	
3	6		42	738	78	610	141	336	1,945	
4	5	2,223	147	644	636	1,385	1,170	240	6,445	
5	5		198	2,411		1,919	15	216	4,759	
6	5	2,319	1,909	8	49	22	211	216	4,734	
7	5	1,871	411	415	71		15	144	2,927	
8	4		98	2,218	20	1,380	87	144	3,947	
9	7	2,137	1,555	631	45	182	138	312	5,000	
10	3		1,975		288	929			3,192	
11	3		747	3	206		327	96	1,379	
12	3	901	686	449	96	19	86	72	2,309	
13	3		5,000	239		54		72	5,365	
14	9	1,935	128	975	83	15	98	70	3,304	
15	3		330	1,010	111	97	167	144	1,859	
16	10	2,162	415	1,648	69	2,851	350	312	7,807	
17	4		141	35		7			183	(1)
18	5		384	510	77	497		174	1,642	
19	5		3,013	192		337		240	3,782	

FMLY NO.	PER-SONS	WAGES CONST.	& MISC. OTHER	ARTS & CRAFTS CARVING DRW'G	SEWING	HUNTING	WELFARE PAYMENTS	SOCIAL LEGISLA-TION	TOTAL	
20	5			518	55		35	264	872	ID
21	8		1,047	1,595	264		170	384	3,460	
22	5		2,884	1,208	171	1,297		168	5,728	
23	7	493	899	2,459		744	169	336	5,100	
24	6		116	2,322		1,322		192	3,952	
25	9			473		1,107	462	504	2,546	
26	4		428	123	191				742	ID
27	5		947	882			191	216	2,236	
28	6		195	1,712	277	123	155	312	2,774	
29	4	1,578	297	487		839	50	168	3,419	
30	9	2,249	179	1,328		77	346	528	4,707	
31	5			56		41	144	168	409	ID
32	11	891	651	129		902	121	652	3,346	
33	8		592	2,742	146	59	443	288	4,270	
34	6			112	123	7	1,036	312	1,590	
35	5		2,453	252	74			240	3,019	
36	7		2,637	317		1,030	60	293	4,337	
37	6		66	659	4		226	240	1,195	
38	10		4,348	356		1,677	61	720	7,162	
39	6	1,705	171	65	174	563	246	276	3,200	
40	4	2,529		728	10		21	144	3,432	
41	4	37	2,051	335	78	553	30	78	3,162	
42	4	355	1,327	567	210	25	36	168	2,688	
43	5		501	1,077		568	23	180	2,349	
44	1									ID
45	5		454	2,240		681	35	216	3,626	
46	4	489	191	391	72		97	96	1,336	
47	7		4,579	6	215			400	5,200	
48	5		439	362	8	102	66	240	1,217	
49	6		469	2,011	80		74	288	2,922	
50	6	2,123	2,363	974	160	2,384	309	96	8,409	
51	9		3,144	2,462	6	1,593	291	312	7,808	
52	10		4,834	1,064	20	14		384	6,316	
53	7	672	1,371	1,689	26	744	180	1,158	5,840	
54	5	95	7,223	9			90	162	7,579	
55	5		3,501			1,200		236	4,937	

FMLY NO.	PER-SONS	WAGES & MISC. CONST.	OTHER	ARTS & CRAFTS CARVING DRW'G	SEWING	HUNTING	WELFARE PAYMENTS	SOCIAL LEGISLA-TION	TOTAL	
56	7		452	126	77	12		366	1,033	
57	8	362	2,324	844	583		110	264	4,487	
58	8	1,433	734	1,990	154		279	312	4,902	
59	6	1,184	8,796	121	10	28		12	10,151	
60	4	485	370	1,378	562	1,171	139	168	4,273	
61	5		2,820	619	692	20		212	4,363	
62	7		2,648	254	136			294	3,332	
63	7	2,772	2,707	1,804	12	7	77	216	7,595	
64	7		773	848	404	36	40	240	2,341	
65	3		515	455	9		129	72	1,180	
66	11	2,677	3,731	792	619		78	372	8,269	
67	4		2,689	971	53	132		168	4,013	
68	7	647	114	3,173	117	1,594	195	216	6,056	
69	9		3,747	863			5	1,595	6,210	
70	4		276	784	37	839	127	144	2,207	
71	5			3,788		14		174	3,976	
72	9	2,404	582	2,838	348	2,201	27	1,140	9,540	
73	9		597	1,364	344	1,236	778	240	4,559	
74	8		343	544		755	476	312	2,430	
75	4		2,834	725	75	2,013		168	5,815	
76	5		1,938	406	186	49		144	2,723	
77	5		5,620			14		136	5,770	
78	5		704	902	199	14		1,725	3,482	
79	8			1,947	250	6	212	336	2,751	
80	9	404	294	779	185	29		1,212	2,903	
81	10	2,356	145	167		92	292	645	3,697	
82	5									(2)
Sub-Total		43,293	113,575	72,924	9,466	38,254	11,622	24,426	313,560	
Undistrib-uted income			800	2,627		2,181	7,200		12,808	
Final Total		43,293	114,375	75,551	9,466	40,435	18,822	24,426	326,368	

Source: D.I.A. & N.D., D.N.H.W., R.C.M.P., W.B.E.C., H.B.Co., C.A.P.

Note: (1) This family was located at Cape Dorset near the end of the specimen period which accounts for the low income.

(2) This family was absent from Cape Dorset during the whole of the period.

ID Insufficient data - complete data could not be acquired for these families.

In all calculations resulting from this table families 44 and 82 are omitted.

Individual amounts are taken to the nearest dollar.

TABLE 27

Distribution Data (Income)

Per capita income	(484 persons)	$ 677
Family income	(80 families)	4,079
Per capita, welfare segment of income		38 - 5.6%
Family, " " "		235 - 5%

$ 0 - 499	2 families	2,500 - 2,999	8 families	7,000 - 7,999	5 families
500 - 999	3 families	3,000 - 3,999	18 families	8,000 8,999	2 families
1,000 -1,499	6 families	4,000 - 4,999	12 families	9,000 - 9,999	1 family
1,500 -1,999	4 families	5,000 - 5,999	8 families	over 10,000	1 family
2,000 -2,499	6 families	6,000 - 6,999	4 families		

Notes: Families numbers 44 and 82 are not included in the calculations shown above. With the exception of family number two, a deaf widow, the survey is reasonably certain that no family would register an income of less than $1,000 had the complete data been available, and had family number 17 resided the whole period in the settlement.

The figures appearing in Table 26, and subsequent calculations based on them, are gross and do not allow for personal income tax and social security deductions at source. The survey had considered the possibility of dealing only in net family income but abandoned the idea after a brief exposure to the hopelessness of this approach.

Moreover, the survey has not attempted to deal with true income which normally would take into account the value of country food, in this instance seal and caribou meat harvested by the Eskimos for their own consumption, and an equalizing factor for housing, heating and lighting provided the Eskimos by the Government under the Eskimo Low-Rental Housing Scheme.

Sources of Family Income

The people of Cape Dorset derive their income from four main sources, i.e., wages, arts & crafts, welfare and social legislation, and trapping and hunting; in that order of magnitude. A fifth source which, for the time being, is designated "miscellaneous", is presently small but has some potential for expansion.

The full relationship of these sources in the family income picture may be seen in Appendix C.

TABLE 28

Total Income Distributed Among Families	$326,368
Source	Per Cent
Wages - construction	13.3
Wages - other	31.7
Arts & crafts	26
Trapping and hunting	12.4
Welfare Payments & Social Legislation	13.2
Miscellaneous	3.3

It is most important to recognize the contribution of construction to income derived from a wage source. This is illustrated by the composite graph and will be further detailed as the text progresses. Construction is sporadic by nature and tends to conceal the underlying economic structure prevailing in the community. It should be looked upon as the source of a welcome injection of money, but prone to curtailment. Its more lasting benefits to the standard of living of the Eskimos are clear enough.

The Origin of Family Income

Here, the report considers those agencies issuing payment to the Eskimos through the several sources described in the preceding paragraphs. The contribution of each in respect to income is registered as a percentage of the total amount applicable to each source.

TABLE 29

ORIGIN OF FAMILY INCOME

Agency	Application	Amount & Percent
Wages	Labour	$ 145,985
D.I.A. & N.D.(Construction)	Casual	29.6
D.I.A. & N.D.(General)	Permanent & Casual	35.4
W.B.E.C.	Permanent	19.5
R.C.M.P.	Permanent	3.3
H.B. Co.	Permanent	8
D.N.H.W.	Permanent	4.2
	Arts & Crafts	$ 85,017
W.B.E.C.	Carvings, sewing and drawings	92.7
H.B.Co.	Carvings	7.3
	Trapping & Hunting	$ 40,435
H.B. Co.	Skins and furs	80.9
W.B.E.C.	Skins and furs	19.1
	Welfare & Social Legislation	$ 43,239
D.I.A. & N.D.	Branch Welfare	43.5
D.N.H.W.	Family Allowances	43.4
D.N.H.W. & N.W.T.	All others	13.1
	Miscellaneous	$ 11,692
Expo '67	Mural	72.7
H.B. Co.	Soapstone	17
W.B.E.C.	Soapstone	10.3

NOTE: Wages - Only major casual employment is shown in this table.

An Examination of the Origin and Sources of Family Income

Under this heading, an attempt is made to examine in more detail the sources of family income to lend clarity to the economic structure of the community.

In its examination of wage labour, the survey concluded that the only meaningful way in which this facet of income could be treated was in terms of man-hours expended in labour. The obvious extension of this would be to ascertain the amount of employment slack in the economy by subtracting the man-hours expended from the man-hours available to labour pursuits. Unfortunately, the very nature of trapping and hunting, and arts and crafts production, precludes the chance that a useful calculation of man-hours can be made relative to these for the purpose of determining the actual man-hours expended on labour of all kinds.

TABLE 30

Man-Hours Expended on Wage Labour

Agency		Employment Perm	Casual	S.T.	O.T.	I.P.A.	Total Hrs.	Persons	Average Hrs. Awarded
D.I.A. & N.D.	(1)		X	16,114	3,393	-	19,507	38	513
D.I.A. & N.D.	(2)	X		7,657	280	5,905	13,842	3	4,614
D.I.A. & N.D.	(3)		X	22,420	-	2,580	25,000	105	238
W.B.E.C.	(4)	X		20,000	-	N/A	20,000	12	1,666
D.N.H.W.	(5)	X		4,360	-	N/A	4,360	4	1,090
"	(6)		X	621	-	N/A	621	13	48
R.C.M.P.	(7)	X		1,890(E)	-	N/A	1,890	1	1,890
R.C.M.P.	(8)		X	240	-	N/A	240	12	20
H.B.Co.	(9)	X		6,432(E)	-	N/A	6,432	4	1,608
H.B.Co.	(10)		X	560(E)	-	N/A	560	40	14
		24	-	80,294	3,673	(8,485)	83,967		

Source: D.I.A. & N.D., D.N.H.W., R.C.M.P., W.B.E.C., H.B.Co.

I.P.A. (Isolated Post Allowance) was put into effect by the Department in October 1964, to compensate prevailing-rate staff in the north for the lack of amenities customarily enjoyed in the south. Under certain conditions of employment, casual employees also are entitled to I.P.A. Eskimos are equally eligible.

(E) - Estimated; ST - Straight Time; OT - Overtime

It is known, however, that unemployment in the community is rife in spite of the impression of affluence imparted by the table depicting the distribution of gross family income. This should be clear to the reader when the man-hours expended as shown in Table 30 are related to the total man-hours available to the community in the age group 16 to 65, which deals with males only.

The total man-hours available in the age group specified is approximately 232,500. The calculation is based on 123 males and an arbitrary work-year of 1,890 normal, or straight-time hours.

Man-hours expended in this fashion for the period was 80,294. The balance of 148,533 must be awarded to trapping and hunting, arts and crafts, and unemployment. The slack in employment is estimated to be substantial because much of the hunting takes place on weekends and certain of the arts and crafts production takes place in the home; much of it during the evening.

1) D.I.A. & N.D. - The erection of Eskimo low-rental houses accounts for construction during the specimen period. Some 38 Eskimos were employed at one time or another during the project which lasted approximately five months commencing in August 1966, and terminating in December of the same year.

   The wage rate used in respect of Eskimo labour was a flat $2.05 per hour, plus time and one-half for overtime. I.P.A. was not paid in this instance.

   Overtime amounted to approximately 17.4% of the total man-hours expended on the project in respect of Eskimo labour. With an application of straight-time rates, the conversion is equivalent to nearly 5,000 man-hours.

   Attention was drawn earlier to the effect of construction on the economy. The tendency is for it to inflate and mask the underlying more or less stable situation. For example, the withdrawal of construction income for the period under examination results in a reduction in wage income of 29.6% and a reduction in per capita and family income of roughly 13.3%.

2) D.I.A. & N.D. - General - In this category the Department regularly employs permanent wage labour in connection with the administration and maintenance of the settlement.

   Three Eskimos are permanently employed and occupy the positions of power-plant operator (assistant), mechanic, and school janitor. These individuals, in addition to the man-hours awarded for straight and overtime, are awarded additional hours from which monies are derived. The additional hours issue from the "isolated post" element of I.P.A. and the manner of its calculation, e.g., after completion of 40 hours of normal time during each week, the worker is credited with an equivalent additional number of hours which are converted to a monetary sum at the rate of $0.86 per hour for a married man, and at the rate of $0.52 for a single man. The rates used are applicable only to Cape Dorset and vary with other settlements.

3) D.I.A. & N.D. - general - The Department is an important employer of casual labour in and about the settlement. The reasons for doing so are manifold in the normal administration and maintenance of the settlement and need not be fully described here. The man-hours awarded to casual labour do, however, require some division. Community projects are carried out in the settlement and are aimed at introducing improvements of a tangible nature like land improvement, as well as improvements aimed at general beautification such as trash clean-up. Such casual labour is distinct from that normally required in the administration of the settlement. 2,090 man-hours were expended on "community projects" and the balance of 3,110 man-hours were expended on "administrative casual" for the want of a better term.

The rate of pay recognized relative to community project labour is a flat $1.50 per hour. I.P.A. is not applicable because the duration of time expended, and/or wages earned, by a given worker on community projects would not make him eligible. Administrative, casual labourers may be compensated on the basis of an established rate scale applied at the discretion of the Administrator of the settlement. Reimbursement is arrived at through a series of percentages applied to a top rate of $2.05. For example, a labourer could be hired at 50, 60, 80 or 100% of $2.05 per hour. In practice, however, the rates applied tend to settle near the upper limit of the scale.

The table shows that the application of I.P.A. to casual labour was the equivalent of 2,580 man-hours.

4) W.B.E.C.- This agency employs as many Eskimos on a permanent basis as do all other agencies combined. In addition, it employs three whites on a permanent basis.

The Eskimos themselves have determined the wage scale to be paid to their colleagues, it ranges from $1.25 to $1.65 per hour. This compares very favourably with wages paid by the H.B. Co., a competitor of the W.B.E.C. People are employed as clerks, warehousemen and in other occupations relative to the general upkeep of the establishment.

The W.B.E.C. is an agency of utmost importance to the community and will, undoubtedly, tend in the future to overshadow all other agencies as the origin of increasing permanent wage employment.

5) D.N.H.W. - The nursing station at Cape Dorset employs four Eskimos on a permanent basis and these are employed in general duties in and about the station.

As indicated in the table, some of the four are on less than a full-time basis, but there is continuity in their employment so it is permanent in the full sense of the term. The rate generally used is $1.25 per hour.

6) D.N.H.W. - The nursing station, like most other agencies, employs a number of persons on a casual basis for very short periods. This is especially true at ship unloading time. Reimbursement may be on an hourly or some other appropriate basis.

7) R.C.M.P. - The detachment engages an Eskimo special constable on a permanent basis. His is a full work year for which the survey has estimated 1,890 man-hours for the specimen period under examination.

As an employee of the Force, he is entitled to certain considerations in respect of housing and rations. This is not, however, meant to imply that they are free. On the other hand, being a police officer, he is expected to put up with encroachments made on his own time which are not reflected in the hours shown in the table.

8) R.C.M.P. - Casual labour is required frequently by the detachment for short periods. These could be guides required in connection with police patrols made along the coast or inland; interpreters for hearings before the Justice of the Peace; guards for prisoners, and help for ship unloading each summer.

Rates applied will vary with the situation and the expected duration of employment. Interpreters, for example, are employed for a few hours at best and the rate would be $2.00 - $2.50 per hour; guiding is generally from $12.00 to $15.00 per day with food supplied.

9) The H.B.Co. - This company, like the W.B.E.C., is a trader/merchant in the community and its work force, therefore, consists mainly of clerks and warehouse help.

Four such Eskimos are employed on a permanent basis, but one of these is part-time only. The wage scale is comparable to that of the W.B.E.C. The H.B. Co. is an important financial institution in the community and not the least of the reasons is its position as the community banker and broker, accepting cheques and contracts alike. The H.B.Co. has been employing Eskimos for a much longer period than any other institution or agency in the area, and the attraction that this company has for the Eskimo is strong.

10) The H.B.Co. - Comparatively large numbers of individuals are employed by the H.B.Co. at ship unloading time. This is generally done on an ad hoc basis and rates, as such, could not be determined. The task force consists usually of men, women, and children to whom reimbursement does not appear to be the principal object of participation.

Arts & Crafts

For convenience, arts and crafts is divided into six main groups of products, i.e., stone carvings, drawings, sewing, graphic prints, printed fabrics, calendars and cards.

The local origin of these sources of family income lies with the W.B.E.C . principally, and to a far lesser extent with the H.B.Co. The income origin of greatest benefit to the Eskimo for a given piece of work is the W.B.E.C. This is so because the W.B.E.C., being an Eskimo co-operative, enables the Eskimo to build up an equity in the institution and to share in its dividends as a result of handicraft sales made in the south, besides receiving payment initially for his product. In the case of the H.B. Co., the initial amount received by the Eskimo is the final amount.

Arts and crafts products accumulated through purchases made by the W.B.E.C. are shipped to C.A.P. Ltd., Ottawa, a private agency subsidized by the D.I.A. & N.D., which markets them at the wholesale level. This company accepts shipments on consignment only and the W.B.E.C. normally receives payment for its consignments after C.A.P.'s accounts receivable are satisfied. The arrangement serves a very useful purpose in bringing the Eskimos' products to the southern market, but the shipment of products under consignment leaves the W.B.E.C. with recurrent shortages of operating capital. The severity of the shortage will vary from year to year but is apt to be persistent as long as an arrangement of this kind continues.

There is perhaps a relationship between the foregoing circumstance and the superior ready cash position of the H.B. Co. as it relates to carving purchases made in the community. During the past two or three years, carving production has been at about the same general level but purchases by the H.B. Co. have varied widely. Inasmuch as the Eskimo receives more in the long run by dealing with the W.B.E.C., it must be assumed that his cash requirements could not be satisfied by that institution and he was forced to turn to the H.B. Co. to sell his work.

TABLE 31

Carvings Purchased by the H.B.Co., Cape Dorset

1961/62	$2,700	1964/65	$ 3,300
1962/63	4,500	1965/66	12,400
1963/64	4,300	1966/67	6,100

Source: The H.B. Co., Winnipeg, Man.

To the present time, the W.B.E.C. has not kept product analyses of a kind that would permit a ready distribution of production and shipment values over the several product groups. It would be clear that some groups of products mean more in terms of family income than others and it is these that are accompanied by the most detail. The groups, stone carvings, drawing and sewing, which contribute directly and immediately to family income, were distributed as follows during the specimen period.

Purchases by the W.B.E.C. from the Eskimos		$78,000
Stone Carvings	approximately	83%
Drawings	approximately	5%
Sewing	approximately	12%

Income to the Eskimos from the group "graphic prints" is reflected in wages paid by the W.B.E.C., as production is carried out by the co-operative itself. Production-runs in the printed fabrics group are done by commercial establishments in the south, as is the printing of calendars and cards of the remaining group. Except for the wages paid to Eskimos by the W.B.E.C. in

the preparation of stone cuts and other preparatory work, the income from these groups devolves upon the W.B.E.C., and might ultimately be expected to accrue to the benefit of the co-operative members in the form of increased equity and the payment of dividends. All groups, however, are accounted for in the total sales figure for the Producer Division shown under "Gross Community Income" and in the cash-flow chart.

Trapping and Hunting

The origin of family income from this composite source again lies with the two trader/merchant institutions; namely, the H.B. Co. and the W.B.E.C. The H.B.Co. has long been the only purchaser of pelts and skins from the Eskimos, but the W.B.E.C. is rapidly increasing its activity in this field. An example of transactions for the specimen period is given below:

TABLE 32

H.B.Co. purchases	May 1, 1966 to April 30, 1967			$32,717.00
	White Fox	Sil. Jar Seal	Com. Jar Seal	Bearded Seal
	$2,865	$9,533	$16,643	$3,676
Av.	$ 15.23	$ 6.84	$ 6.84	$ 13.92

Source: H.B.Co., Cape Dorset

W.B.E.C. purchases				$ 7,718
	$1,313	$1,574	$4,416	$ 415
Av.	$ 13.67	$ 7.12	$ 6.80	$ 13.83

Source: W.B.E.C., Cape Dorset

During July 1967, the price of silver and common jar sealskins, which usually constitute the bulk of the hunting harvest, declined to an approximate average of $2.82 per skin. This circumstance was brought about by a severe lowering of the market attributable to adverse publicity afforded the sealing industry in recent years.

This deterioration in price, if it persists, will remove hunting as a source of income of any account to the community. The magnitude of deterioration is better appreciated when equated with the peak price of $30.00 paid for skins in January 1964. The depreciation in price from that time to the period under examination was 77%. Two months following the end of the specimen period, the price had depreciated a further 59% from that established for the period. If applied to the harvest for May 1, 1966 - April 30, 1967, the equivalent drop in income from trapping

and hunting would be roughly $18,978.00

At Cape Dorset, 60 families derived some measure of income from hunting, during the period. The loss of this income to the community would be felt, but not nearly to the same degree as would be experienced at Lake Harbour which will be dealt with in Part III.

Welfare and Social Legislation

Welfare - Welfare payments originate with the D.I.A. & N.D. and are issued for several causes of need. It was decided to eliminate much of the detail pertinent to this source because it is felt that most people are familiar with the reasons for its issue and a detailed break-down would contribute little of value to this examination.

It can be said, however, that the bulk of issues made for welfare purposes were for health and economic reasons. The former implies incapacitation through illness or injury, and the latter may be attributed to poor trapping and hunting conditions and the lack of wage employment. All result in inadequate support for the family and compensation must come from welfare in the present circumstances.

Welfare payments, in most cases, are made in kind through the issue of vouchers through the H.B.Co. and the W.B.E.C. Payments for the specimen period are illustrated below. Welfare for ward and non-ward children is separated from all other payments which are grouped simply as "other".

Child Welfare	Other	Total
$2,821	$16,000	$18,821

Source: D.I.A. & N.D.

Fifty-seven families were in receipt of welfare payments at sometime during the period. The highest sum received by any one family was $1,169 and the lowest amount received was $4.85.

The level of welfare has risen by 86% since the year 1962/63. In 1966/67, however, a decline of 2% occurred over the preceding year.

Family Allowances - Income from this source originates with the D.N.H.W. There were 77 recipient families during the period. Payments were made in respect of 256 children who were eligible for the allowance and the average income derived per child was $73.40.

Old Age Security and Guaranteed Income Supplement - Income from this source originates with the D.N.H.W. During the period, three individuals were in receipt of payments. At the time of the survey, old age security was payable upon attaining 68 years of age. The supplement became effective January 1967, and qualification is by means of an income test.

Under a sharing arrangement between the Government of the Northwest Territories and the Federal Government payments are available to the aged and the disabled in certain circumstances. At Cape Dorset a few individuals derive income from this source as shown below.

TABLE 33

Category	When Payable	Recipients	Total
Old age assistance	Over 65 yrs. (by means test)	2	
Blind persons all.	Over 18 yrs.	-	
Disabled persons all.	Over 18 yrs.	2	
Disabled persons assist.	Over 18 yrs.	2	$2,775

Source: D.I.A. & N.D.

Note: Disabled persons allowance and disabled persons assistance are differentiated by the degree of disability determined for each case.

Miscellaneous

Under this category the survey has placed two sources of income which do not fit readily into previous classifications. Both are rather special but could show a good deal of promise if properly developed.

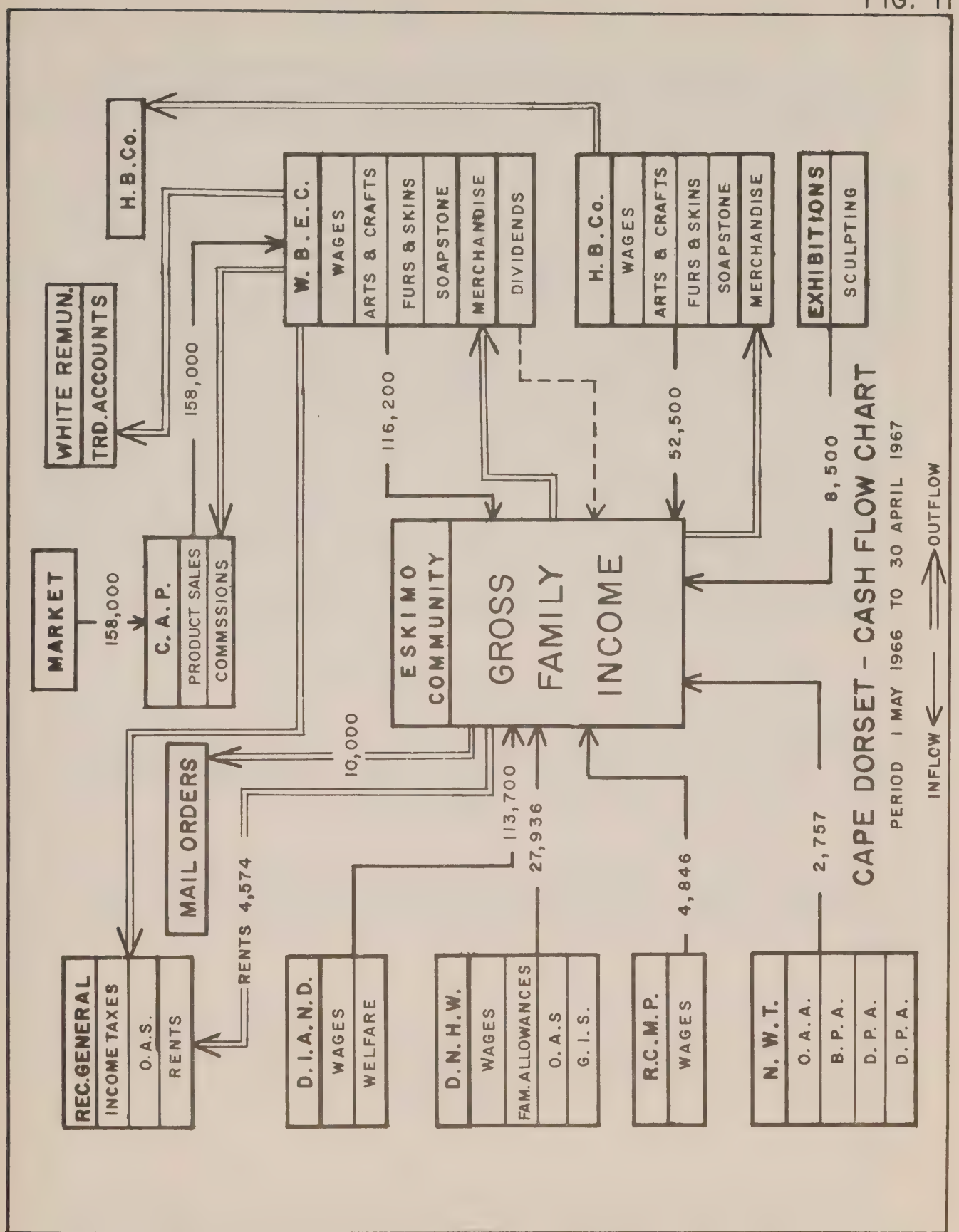
Expo '67 - Approximately $8,500 of income was derived from this origin by two Eskimos of the community. The amount was earned and recorded during the specimen period.

Cape Dorset Eskimos enjoy an enviable reputation in certain of the arts and are increasingly in demand by guilds and exhibitions on certain occasions. During July and August of 1967, an Eskimo was employed by the International Sculptor's Symposium at Toronto and it is to be hoped that many more such opportunities will present themselves in the future.

Soapstone - The mining of soapstone is carried on by the W.B.E.C. and Eskimos of the community owning larger vessels. Through an arrangement, explained elsewhere in the report, the material is purchased by both the W.B.E.C. and the H.B. Co.

Purchases under this scheme amounted to $3,192 but represented only two bulk shipments totalling approximately 16 tons. This tonnage is little more than half the weight of stone actually consumed during the period but records were not sufficiently detailed to permit the extraction of complete data.

FIG. 11


CAPE DORSET - CASH FLOW CHART
PERIOD 1 MAY 1966 TO 30 APRIL 1967
INFLOW
OUTFLOW
GROSS FAMILY INCOME
ESKIMO COMMUNITY
H.B.Co.
W.B.E.C.
WAGES
ARTS & CRAFTS
FURS & SKINS
SOAPSTONE
MERCHANDISE
DIVIDENDS
H.B.Co.
WAGES
ARTS & CRAFTS
FURS & SKINS
SOAPSTONE
MERCHANDISE
EXHIBITIONS
SCULPTING
WHITE REMUN.
TRD.ACCOUNTS
158,000
116,200
52,500
8,500
MARKET
158,000
C.A.P.
PRODUCT SALES
COMMSSIONS
10,000
MAIL ORDERS
RENTS 4,574
113,700
27,936
4,846
2,757
REC.GENERAL
INCOME TAXES
O.A.S.
RENTS
D.I.A.N.D.
WAGES
WELFARE
D.N.H.W.
WAGES
FAM.ALLOWANCES
O.A.S
G.I.S.
R.C.M.P.
WAGES
N.W.T.
O.A.A.
B.P.A.
D.P.A.
D.P.A.

The soapstone resource is very important to the income of Eskimo families and is the subject of a recommendation appearing in the final chapter of the report.

Cash Flow

Cash-flow is normally a valuable indicator of the level of economic activity in a community and, when complete, would also indicate the net position of the community with regard to the existence or absence of savings. The treatment of cash-flow was, however, necessarily restricted to the detailing of inflow only. The existence of private institutions in the community precludes revealing complete financial data which would have made possible the full detailing of outflow as well. The area of personal income taxes is rather confused and nothing useful could be extracted. In spite of these encumbrances, it was deemed worthwhile to show all that could be shown relative to cash-flow. The data are illustrated in the companion chart, figure 11.

The reader, if interested, could arrive at a useful approximation of outflow through deduction by using the data provided in this chapter and the knowledge that the W.B.E.C. and the H.B.Co. transact about equal volumes of business through their merchandise outlets. Also, actual savings are negligible in the community. An approximation of personal income taxes might also be deduced by using averages established for the N.W.T.

Income Pattern

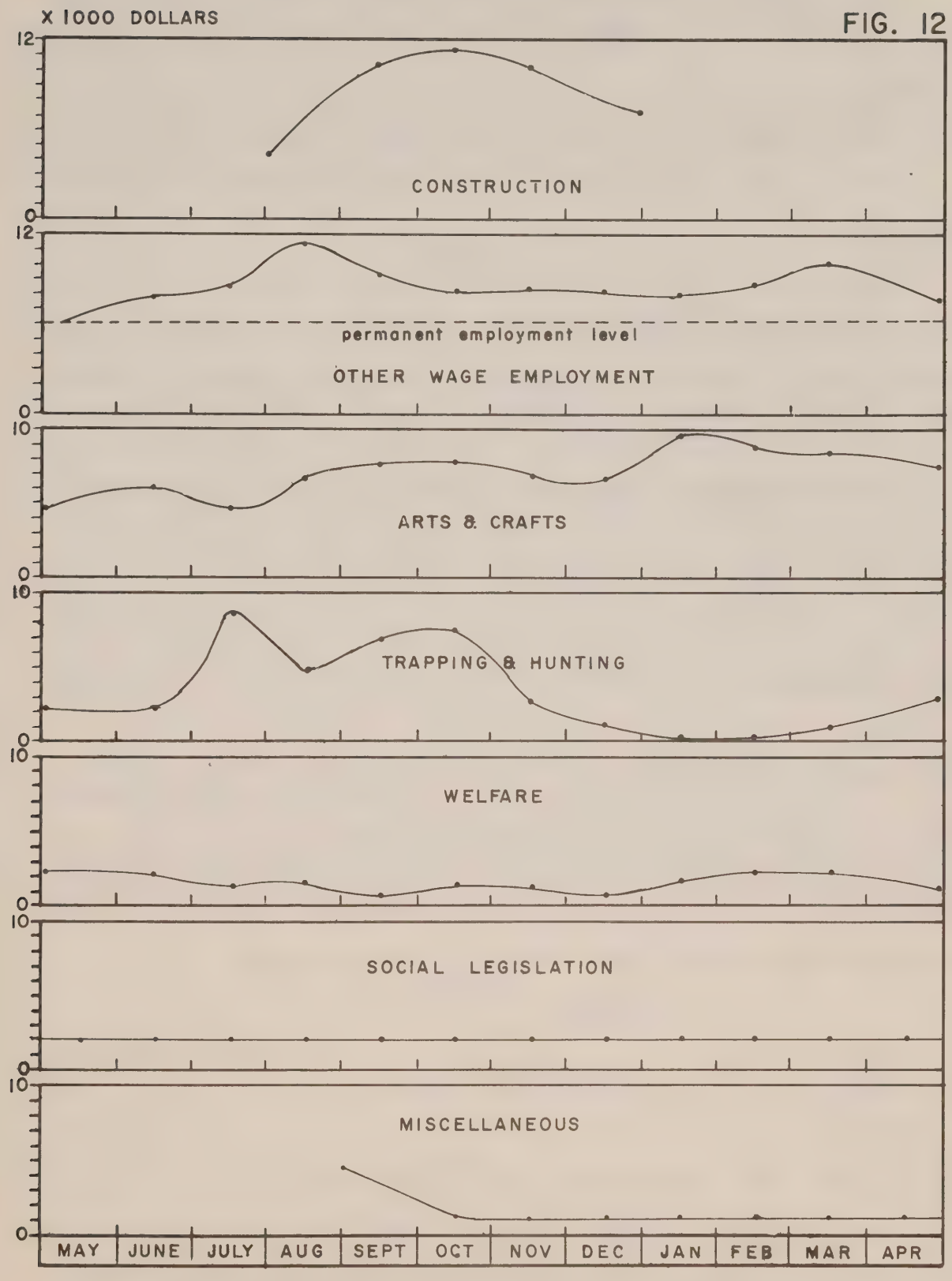
The income pattern for the period is illustrated in Figure 12 and may, for all intents and purposes, be referred to as the "seasonal cycling of income". This is so because, if a series of graphs were to be constructed for succeeding years, many cyclic features would be evident; social legislation, miscellaneous, and permanent wage labour excepted.

Construction would always occupy the same position on the graph; other casual wage employment would reflect greater activity during ship unloading time in late July and August, and a related drop in hunting income would appear during the same period; handicraft production would increase in the winter months, etc.

A poor trapping year is clearly reflected in the graph which, in a peak year, would show a substantial increase in income in the months of February, March and April. Income from welfare corresponds very favourably with the commencement and termination of construction. It can be assumed that welfare income would have increased in March had community project employment not been introduced to take up the employment slack in that month.

INCOME PATTERN
CAPE DORSET

PERIOD 1 MAY 1966 TO 30 APRIL 1967



Rents

TABLE 34

Old Housing

Units	Jan.	Feb.	Mar.	Apr.	May	June	Total
39	$556	$468	$497	$585	$505	$368	$2,979
New Housing							
25	$622	$610	$618	$618	$645	$720	$3,833

Source: D.I.A. & N.D., Cape Dorset

The example shows an average recovery annually of approximately $153 or roughly $12.50 per month in respect of older housing. The newer housing shows the average to be approximately $307 or about $25.60 per month.

The application of the rent formula will involve considerable difficulty in category (c). Likewise, certain aspects of category (b) present difficulties. However, as the demand for the better recording of data at the community level makes itself felt, the application of the present formula might be expected to improve.

Consumption of Fuel

The community of Cape Dorset is rapidly becoming a comparatively large consumer of petroleum products; especially heating fuel. The fuel agent in the community is the D.I.A. & N.D. which distributes the product to low-rental houses as an item included in the rent*. The D.N.H.W.; the R.C.M.P., and the H.B. Co. also draw their fuel from the D.I.A. & N.D. The latter company, under a subsidy agreement with the Department, sells the product to private users such as the W.B.E.C. and individuals who have a requirement for it.

Consumption during the past three years is illustrated below:

TABLE 35

Year	1964/65	gallons	55,636 (PE)
	1965/66	"	116,206
	1966/67	"	170,685

Source: D.I.A. & N.D., Cape Dorset, (PE) Partially Estimated

* Prior to the advent of low-rental housing in 1966 the Hudson's Bay Co. under Minute TB 566219, 8/4/64, was deemed the sole distributor of heating oil. In 1968, following the preparation of this area survey report, contractual arrangements were being concluded between the D.I.A. & N.D. and the Shell Oil Co whereby the latter would assume the role of distributor of heating and certain other fuels in the settlements of Cape Dorset & Lake Harbour for an initial period of five years.

Fuel oil is sold to the R.C.M.P., for its own consumption, at 23.9 cents per gallon, and to the H.B. Co. at 27.9 cents per gallon. The latter company retails this fuel at 35 cents per gallon. The Anglican Mission imports its own supplies.

It was possible to accumulate data sufficient to effect a distribution of consumption over a period of two years. The distribution for these periods would be useful in making future projections of specified consumption and are shown in the following table.

TABLE 36

Year	Generators	Vehicles	DIAND Bldgs.	Eskimo Houses	R.C.M.P.	Total
1965/66	20,826	1,894	50,542	14,369	2,150	116,206
1966/67	33,602	1,672	96,332	10,112	3,016	170,685

Source: D.I.A. & N.D., Cape Dorset - quantities in imperial gallons

The large increase under "D.I.A. & N.D. Bldgs" is predominantly a reflection of consumption relative to 25 Eskimo low-rental housing units for a period of five months. Also included under this heading is the consumption of the D.N.H.W. Nursing Station and certain issues in connection with social assistance. A further detailing under that heading was not possible.

Consumption of Electric Power

Electrification of the settlement is complete and available to all households. The price of electricity to users other than occupants of the low-rental housing units is at the rate of $0.12 per KWH. Consumption in kilowatt hours for the past three years was as shown in the table.

TABLE 37

Power Consumption

Year	Fuel Consumed in Gallons	Power
1964/65	15,686	141,174 KWH
1965/66	20,826	187,434 KWH
1966/67	33,602	302,418 KWH

Source: D.I.A. & N.D., Cape Dorset
Note: Power calculation is based on 10 KWH per gallon, less 10% line loss

The increased power consumption is mainly a result of the new housing for a period of four to five months. Twenty-four additional houses were under construction while the survey was in progress, so an increase of at least 50,000 KWH might be expected in 1968.

PART III

THE ECONOMY OF LAKE HARBOUR

The Level of Capital Investment

The procedures and explanations that were applied to Cape Dorset in discussing the level of capital investment will apply also to Lake Harbour.

Resumé of Capital Investment

Government

Year & Agency	Amount	Purpose	Total Value Assigned
D.I.A. & N.D.	(Source: D.I.A. & N.D. and Survey Estimate)		
1961-1965	$ 60,000	Bldg's and Equip.	
1966-1967	326,000	Bldg's and Equip.	
1967			$346,000

Note: No allowance was made by the D.I.A. & N.D. for demolishing some of the older buildings following erection of the new housing in 1967. The survey assumes that approx. $40,000 may be subtracted from the 1961-1965 figure as being representative of retired earlier investment in buildings no longer habitable.

D.N.H.W.	(Source: Survey Estimate)	
1967	Old building now used as school	$ 16,000
R.C.M.P.	(Source: R.C.M.P., H.Q.)	
1967	Buildings, radio and small equipment.	$ 50,000
Total Value Assigned, 1967		$412,000

Private

H.B.Co.	(Source: Survey Estimate, 1967)	
1967	Buildings, fixtures and equipment	$65,000
Anglican Church	(Source: Survey Estimate, 1967)	
1967	Buildings and fixtures	$43,000

Eskimo - The investment of the Eskimos of Lake Harbour is limited strictly to harvesting equipment. There is no community building or co-operative in the settlement, and with accommodation being Government owned, real property is not a consideration.

Eskimo (Source: Survey Estimate, 1967)

1967

Vessels	Canoes	Outboard Motors	Ski-doos	Traps	Rifles	Tents	Binoc-ulars	Slpg. Bags
4	16	17	30	550	80	18	16	20
$18,000	$9,600	$6,800	$27,000	$ 550	$5,200	700	650	1,400

Note: Values are based on current replacement costs.

With the exception of the older Eskimo housing and the present school facilities, all buildings in the community are in good condition. The R.C.M.P. trailer unit which was erected in the settlement in 1967 is the most superior accommodation.

Eskimo equipment is generally rather poorly maintained, and the same is true at Cape Dorset. In the circumstances it would be quite unfair to say that the Eskimo just is not interested in the maintenance of vehicular equipment since shop facilities for such tasks either do not exist or are not available for such a purpose.

As to the care of firearms, the Eskimo is generally remiss, and displays an almost complete disregard for their upkeep. As well, his investment in firearms could have been drastically reduced by a more informed selection of calibres and gauges to suit his actual needs.

Recapitulation

Total Investment by Source		Per Capita Distribution (population 142)
Government	$412,000	$2,901
Private		
- H.B. Co.	65,000	457
- Anglican Church	43,000	302
- Eskimo		
- Harvesting equipment	69,900	492

Projected Capital Investment

1968 to 1973	- 2 Classroom school, plus an activity room	$150,000
	- 1 Hostel, capacity 12 children	$ 70,000
	- 1 Staff house	$ 30,000
	- 12 Houses, Eskimo low-rental	$156,000
	- 1 Bulk oil storage tank	$ 93,000
	TOTAL	$499,000

The same qualification that attended the construction of the storage tank at Cape Dorset applies equally to the one intended for Lake Harbour.

Although the period of the projection is for five years, all of the construction shown above is expected to be completed by the end of 1969.

Annual Levels of Gross Community Income

In the absence of an Eskimo co-operative organization, gross community income at Lake Harbour is, for all intents and purposes, identical to gross family income.

In the table that follows, the level of income in the community is shown annually over a span of five years. Analyses based on this table are not too relevant because of the degree of estimation necessary. These do, however, indicate the general magnitude of income levels over the period, and in this context are a valuable indicator of the degree of economic activity in the community besides providing a means of isolating the most important sources of income.

A comparatively accurate appreciation of income for a lesser period of time can be gleaned from the section dealing with gross family income which follows later.

TABLE 38

ANNUAL LEVELS OF GROSS FAMILY INCOME

Year	Wages	Arts & Crafts	Trapping Hunting	W.P. & S.L.	Total
1962/63	6,000 (PE)	7,300	18,600	No Data	$31,900
1963/64	7,000 (PE)	3,400	41,200	8,600 (PE)	60,000
1964/65	10,300 (PE)	3,500	39,000	8,700 (PE)	61,500
1965/66	12,300	9,900	18,700	8,000 (PE)	48,900
1966/67	28,000	12,400	21,000	13,000	74,400

(PE) - Partially estimated by the survey and the D.I.A. & N.D.
Sources: D.I.A. & N.D., D.N.H.W., R.C.M.P., H.B.Co.

Distribution of Gross Family Income

Lake Harbour, though considerably smaller than Cape Dorset, presented many obstacles to the usual data gathering processes. The community has never had a resident Administrator concerned only with the tasks pertinent to that position. As a consequence, a filing system as such does not exist. Historical economic data concerning Government activity in the detailed sense were not available in the community.

TABLE 39

DISTRIBUTION OF GROSS FAMILY INCOME

LAKE HARBOUR

Specimen Period May 1, 1966 to April 30, 1967

Fmly No.	Persons	Wages	Arts and Crafts	Trapping & Hunting	Welfare Pay's	Social Legislation	Total
1	7	1,433	1,032	781	97	348	3,691
2	3	7,209	3	707		88	8,007
3	9	67	936	984	247	538	2,772
4	7	6,610		616		384	7,610
5	6			449	567	348	1,364
6	7	1,497	462	889	68	360	3,276
7	4		116	929	305		1,350
8	4		144	979	71	78	1,272
9	2	281			660		941
10	4	66	143	2,262	119	72	2,662
11	6		647	1,571	86	168	2,472
12	6	794	177	98	245	264	1,578
13	3	1,157	143	777	135		2,212
14	6	605	211	505	489	252	2,062
15	1	6	433	81	120		640
16	5	20	94	596	134	216	1,060
17	2	3	1,087	858			1,948
18	4	4	274	1,102	283	1,350	3,013
19	10	1,890	1,148	922	138	288	4,386
20	11	975	789	6	1,234	455	3,459
21	9	1,884	579	2,145	317	1,322	6,247

(Table 39 - cont'd)

Fmly No.	Persons	Wages	Arts and Crafts	Trapping & Hunting	Welfare Pay's	Social Legislation	Total
22	7	667	779	927	115	174	2,662
23	7	1,309	242	871	93	264	2,779
24	3	176	37	596	49	144	1,002
25	9	496	1,851	2		450	2,799
Sub-total		27,149	11,327	19,653	5,572	7,563	71,261
Undistributed Income			1,400	1,430			1,400
Final Total		27,149	12,727	21,083	5,572	7,563	74,094

Data relevant to construction income were obtained at Frobisher Bay and Ottawa following completion of the field work. Other income data were supplied by the R.C.M.P. and the H.B.Co. in the settlement.

A limited amount of extrapolation was required to apportion about thirty per cent of the hunting income over hunters in accordance with their abilities in that field. Also, an amount in the sum of $1,400 could not be awarded to families and is shown as undistributed in Table 39

The distribution of family income was effected on an individual basis and grouped subsequently into families as was done for Cape Dorset. Individuals were assigned to families in accordance with the Eskimo Directory prepared by the R.C.M.P.

TABLE 40

Distribution Data (Income)

Per capita income	(142 persons)	$ 521
Family income	(25 families)	$2,963
Per capita, welfare segment of income		39-7.5%
Family, welfare segment of income		223-7.5%

$ 500 - 999	2 families	2,000 - 2,499	3 families	3,500 - 3,999	1 family
$1,000 - 1,499	5 families	2,500 - 2,999	5 families	4,000 - 4,499	1 family
$1,500 - 1,999	2 families	3,000 - 3,499	3 families	over - 5,000	3 families

Sources of Family Income

Like Cape Dorset, Lake Harbour Eskimo residents derive their income from four sources. There are, however, rather significant differences which will become apparent as the distribution data are expanded (see Appendix D).

TABLE 41

Total Income Distributed Among Families	$74,094
Source	Per Cent
Wages -construction	15.7
Wages - Other	21
Arts & Crafts	17.1
Trapping & Hunting	28.5
Welfare payments & Social legislation	17.6

Attention is drawn to the magnitude of the contribution made by trapping and hunting to family income, and the low development of handicrafts as a source of income. Construction was important to the community, as it was to Cape Dorset, but at Lake Harbour there exist severe physical limitations to expanded construction and economic justification for it may be lacking.

TABLE 42

ORIGIN OF FAMILY INCOME

Agency	Application	Amount and Per Cent
Wages	Labour	$27,149
D.I.A. & N.D. (Construction)	Casual	42.8
D.I.A. & N.D. (General)	Permanent	24.4
H.B. Co.	"	13.1
R.C.M.P.	"	19.7
	Arts & Crafts	$12,727
H.B. Co.	Stone and ivory carvings	63.2
Private Purchasers	Stone and ivory carvings	36.8
	Trapping & Hunting	$21,083
H.B. Co.	Skins & furs	100

	Welfare and Social Legislation	$13,135
D.I.A. & N.D.	Welfare	42.4
D.N.H.W.	Family Allowances	39.6
D.N.H.W. and N.W.T.	All other	18

Source: D.I.A. & N.D., R.C.M.P., H.B. Co., Private Purchasers

Note: Wages - Only major casual employment is shown in this table

An Examination of the Origin and Sources of Family Income

In arriving at a tally of man-hours expended in connection with construction wage-labour, the survey had to resort to estimates based on an application of the top rate to the sums earned by the individuals concerned. In the case of the R.C.M.P. and the H.B.Co., an arbitrarily selected work year of 1890 hours was used.

TABLE 43

Man-Hours Expended

Agency		Employment Perm.	Casual	S.T.	O.T.	I.P.A.	Total Hours	Persons	Average Hrs. Awarded
D.I.A. & N.D.	(1)		X	4,837	665	-	5,502	30	183
"	(2)	X		2,288	-	1,960	4,248	1	4,248
H.B.Co.	(3)	X		2,632	-	N/A	2,632	2	1,316
"	(4)		X	720	-	N/A	720	40	18
R.C.M.P.	(5)	X		1,890	-	N/A	1,890	1	1,890
"	(6)		X	440	-	N/A	440	22	20
				12,807	665	(1,960)	13,472		

Source: D.I.A. & N.D., R.C.M.P., H.B. Co. (supplemented by survey estimates)

I.P.A. - At Lake Harbour the rate for a married man is $1.00 per hour and for a single, $0.57.

The total man-hours available to the community, using the arbitrary work-year of 1890 hours and the age group 16 to 65 years, is 68,040. The calculation is based on 36 males comprising this group.

Wage employment utilizes 12,807 of the total 68,040 man-hours available to the community. This means that 81 per cent of normal time available must be awarded to trapping and hunting, arts and crafts production and unemployment. This compares with approximately 65 per cent at Cape Dorset.

1. D.I.A. & N.D. Construction - The installation of a power-house and an electricity distribution system accounted for construction projects in the community during the specimen period. Judging by the number of persons employed at such work, nearly every male in the community must have received at least some employment in connection with the project.

   The rate applied was a straight $2.05 per hour, with time and one half for overtime. The amount of overtime recorded represents approximately 13.7 per cent of the total man-hours expended on the project.

   Construction was a substantial contributor to wage income for the community. Its absence during the period would have resulted in per capita and family incomes of respectively $439 and $2,498, instead of the actual $521 and $2,963.

   During the course of the survey, a construction project was mounted involving the erection of ten, Eskimo low-rental housing units. Income from this project will be reflected at the end of year 1967/68. It was noted, however, that fewer people were being employed for much longer periods, so the distribution of income can be expected to show a more limited spread over the families than for the specimen period.

2. D.I.A. & N.D. General - The Department maintains one, prevailing rate, or permanent employee in the community. His job is to tend the power house and do other jobs for which the D.I.A. & N.D. is normally responsible.

   The need for casual labour of the administrative kind, referred to in connection with Cape Dorset, is largely absent in the settlement because there are no roadways or vehicular equipment. The absence of these restricts community development projects, and just about any maintenance work on a community scale.

3. H.B. Co. - One clerk is employed on a permanent, full-time basis and a second is permanent, but part-time only. This is reflected in the man-hours shown in the table. The company, up to the end of 1966, used to employ a few Eskimos in the building of boats at Lake Harbour, but this enterprise is now defunct.

4. Casual labour is engaged occasionally by the company; especially during ship unloading time when a good percentage of the population becomes involved. Such employment is only of passing importance and contributes little to the total income picture.

5. R.C.M.P. - This agency employs one Eskimo as a special constable; the normal practice in most settlements. It is one of the best paying and most prestigious jobs in the community of Lake Harbour.

6. The R.C.M.P. employs some casual labour at ship unloading time and for minor construction and maintenance projects within its compound. The survey has used a rate of $1.50 per hour in arriving at its tally of man-hours expended on this type of employment.

Arts & Crafts

The arts and crafts industry at Lake Harbour is limited to stone carving and ivory etching and is not commercially organized as at Cape Dorset. The H.B. Co. is the principal purchaser in the community, but private purchasers drain off a fair amount of production; especially the ivory etchings which are among the best in the Arctic.

The H.B.Co. in a communication from its office in Winnipeg reported carving purchases for the year 1966/67 to be $12,400 while the survey shows H.B. Co purchases of approx. $8,000 for the period. The latter amount is the one that appeared in the records for the period under examination and any difference must be attributed to the lack of correspondence between the H.B. Co. fiscal year and the survey specimen-period.

A table of purchases made by the H.B. Co.over the past several years appears as follows:

TABLE 44

1961/62	$3,100	1964/65	$3,500
1962/63	$7,300	1965/66	$9,900
1963/64	$3,400	1966/67	$12,400

Source: H.B. Co., Winnipeg, Man.

There is no doubt whatever that arts and crafts could be expanded in the settlement to the Eskimos' advantage. It has been mentioned that the best possible outlet for these products at the present time is through C.A.P. in Ottawa, and an Eskimo organization in the community itself. Around the end of 1967, the D.I.A. & N.D. was examining ways of assisting the Eskimos in forming an organization and it is possible that in 1968 a more favourable outlook for arts and crafts will exist in the settlement.

Trapping and Hunting

This pursuit has long been the principal, stable source of income for Lake Harbour families. All but one family derived some measure of income from trapping and hunting during the specimen period. Appendix B shows that 28.5 per cent of the total income issued from this pursuit. The per capita and average family incomes so derived were respectively $148 and $843. This compares with $83 and $505 for Cape Dorset,serving to emphasize its greater importance at Lake Harbour where total per capita and family income levels are markedly lower to begin with.

The deterioration of sealskin prices alluded to elsewhere in the text, if they persist, will seriously affect hunting as a source of income. Trapping, on the other hand, is expected to rise during the coming two years and will, to a limited extent, tend to offset the loss of hunting income. However, if reasonable incomes are desired for the community, then salvage measures of some sort will probably be necessary for 1968/69; the same will be required in 1967/68 if construction planned for that year does not materialize.

The trapping and hunting take with values for the specimen period are recorded as follows: (The H.B. Co. was the sole purchaser of the harvest)

TABLE 45

H.B. Co. Purchases May 1, 1966 to April 30, 1967

Fox	Silver Jar Seal	Common Jar Seal	Bearded Seal
$795	$7,387	$9,682	$3,219
Average price			
$14.45	7.30	8.07	17.00

Source: H.B. Co., Lake Harbour

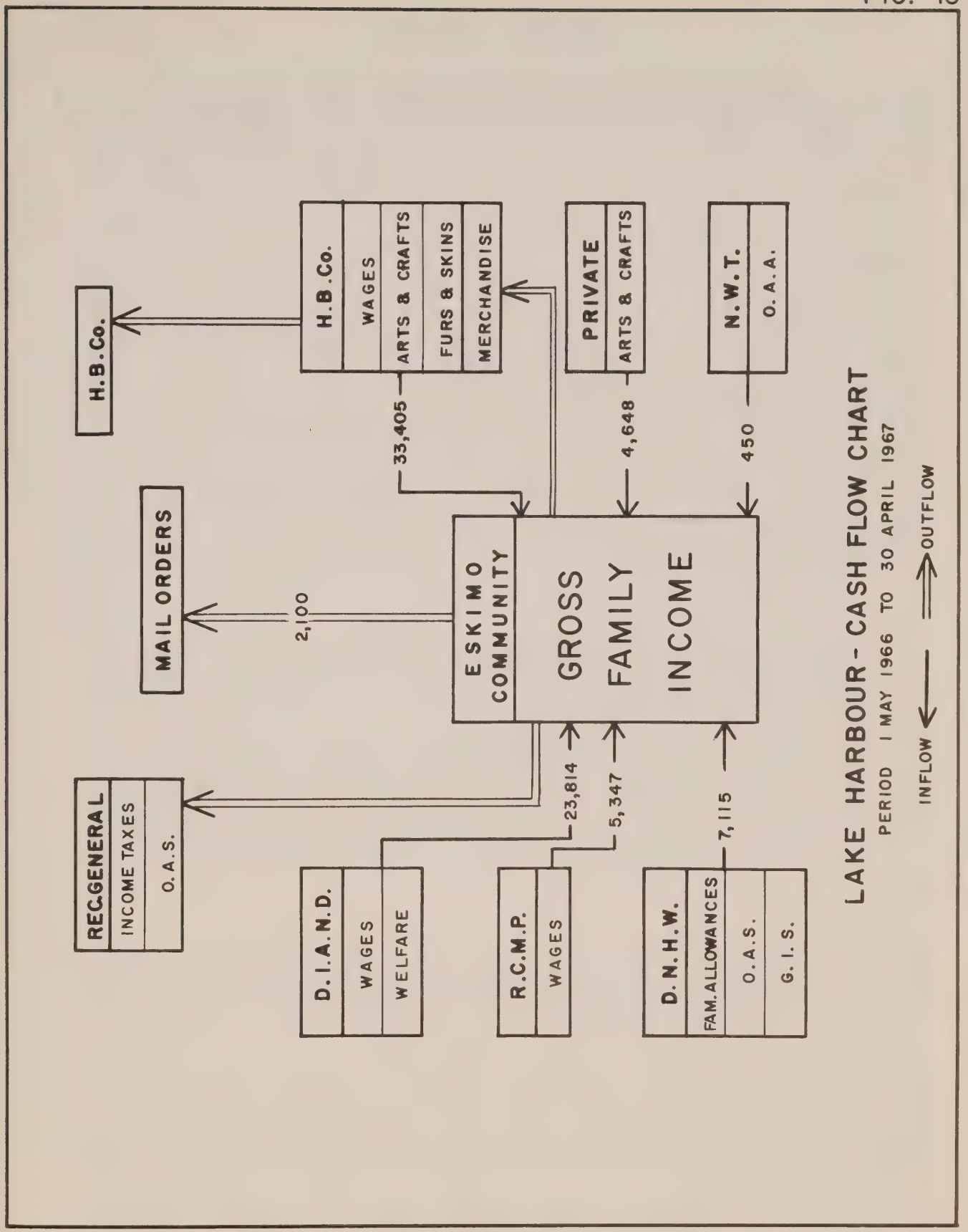
Welfare and Social Legislation

Welfare - The origin of welfare is the D.N.H.W., but its local issue at the time of the survey was the responsibility of the R.C.M.P. detachment in the community. It is dispensed by means of a voucher issued on the H.B. Co. store.

Only four families failed to draw welfare during the period, and two of these were the families of the Special Constable and the D.I.A. & N.D. permanent employee. Of the total families drawing welfare, three of them were headed by widows; two were drawing for health reasons, and the balance for economic reasons. The high proportion of economic cases should provide some indication of the present day minimum income requirements for Eskimos in the area. The average family consists of 5.7 persons at Lake Harbour, and welfare issues are made by the R.C.M.P. only after all other income sources are fully exhausted.

Family Allowances - The origin lies with the D.N.H.W. The calculation of family allowances was arrived at by the same method used for Cape Dorset, i.e., birth dates were taken from the Eskimo Directory and the appropriate allowance rates were applied. There were 75 children qualified for the allowance during the period and the average payment was $75.50.

FIG. 13


LAKE HARBOUR - CASH FLOW CHART
PERIOD 1 MAY 1966 TO 30 APRIL 1967
INFLOW
OUTFLOW
ESKIMO COMMUNITY
GROSS FAMILY INCOME
H.B.Co.
WAGES
ARTS & CRAFTS
FURS & SKINS
MERCHANDISE
33,405
PRIVATE
ARTS & CRAFTS
4,648
N.W.T.
O.A.A.
450
H.B.Co.
MAIL ORDERS
2,100
REC.GENERAL
INCOME TAXES
O.A.S.
D.I.A.N.D.
WAGES
WELFARE
23,814
R.C.M.P.
WAGES
5,347
D.N.H.W.
FAM. ALLOWANCES
O.A.S.
G.I.S.
7,115

Old-Age Security and Guaranteed Income Supplement - The origin of this income is the D.N.H.W. Two persons are in receipt of payments under these schemes. Both are members of families enjoying comparatively good incomes. One of the individuals draws old age assistance, as well as the payments noted above. The latter is payable by the Territorial Government.

Cash Flow

The survey felt it would be useful to prepare a cash flow chart for Lake Harbour just as it did for Cape Dorset. A comparison of these charts is a great help when trying to place the respective levels and agencies of economic activity into proper perspective.

No attempt will be made by the survey to measure cash outflow from the community except in the case of C.O.D. mail orders which lend themselves readily to measurement. No rents were recorded during the period. As was stated for Cape Dorset, the reader could estimate the amounts of cash outflow through the two agencies concerned. There are virtually no monies saved in the community.

Income Pattern

In charting the income pattern at Lake Harbour, the survey found expected similarities to the pattern evident at Cape Dorset. Only the monetary levels showed marked differences.

The year 1967/68 could show favourable increases in construction and handicraft income levels, provided planned developments are not impeded. If they are, then the welfare graph in Figure 14 will show a much higher level throughout with a pronounced peak beginning in January and terminating about the end of May, notwithstanding an expected improvement in trapping.

Rents

A rent structure pertinent to old Eskimo housing did not exist at Lake Harbour at the time of the field work. However, ten low-rental housing units were under construction and were to be readied for occupancy by December of 1967, at which time the standard rental formula would apply.

On the basis of income data compiled by the survey, the average recovery monthly through rents can be expected to amount to roughly $25 per unit. With the expected drop-off in hunting income for 1967/68, however, an average monthly recovery of roughly $18 or less per unit should be anticipated.

Consumption of Fuels

Heating fuel is imported into Lake Harbour in barrels rather than in bulk, as it is at Cape Dorset. In addition, each agency looks after its own importation. All of this makes it difficult to arrive at reliable consumption figures for the community. The following consumption levels were obtained from available documents which were not necessarily complete.

INCOME PATTERN
LAKE HARBOUR

PERIOD 1 MAY 1966 TO 30 APRIL 1967

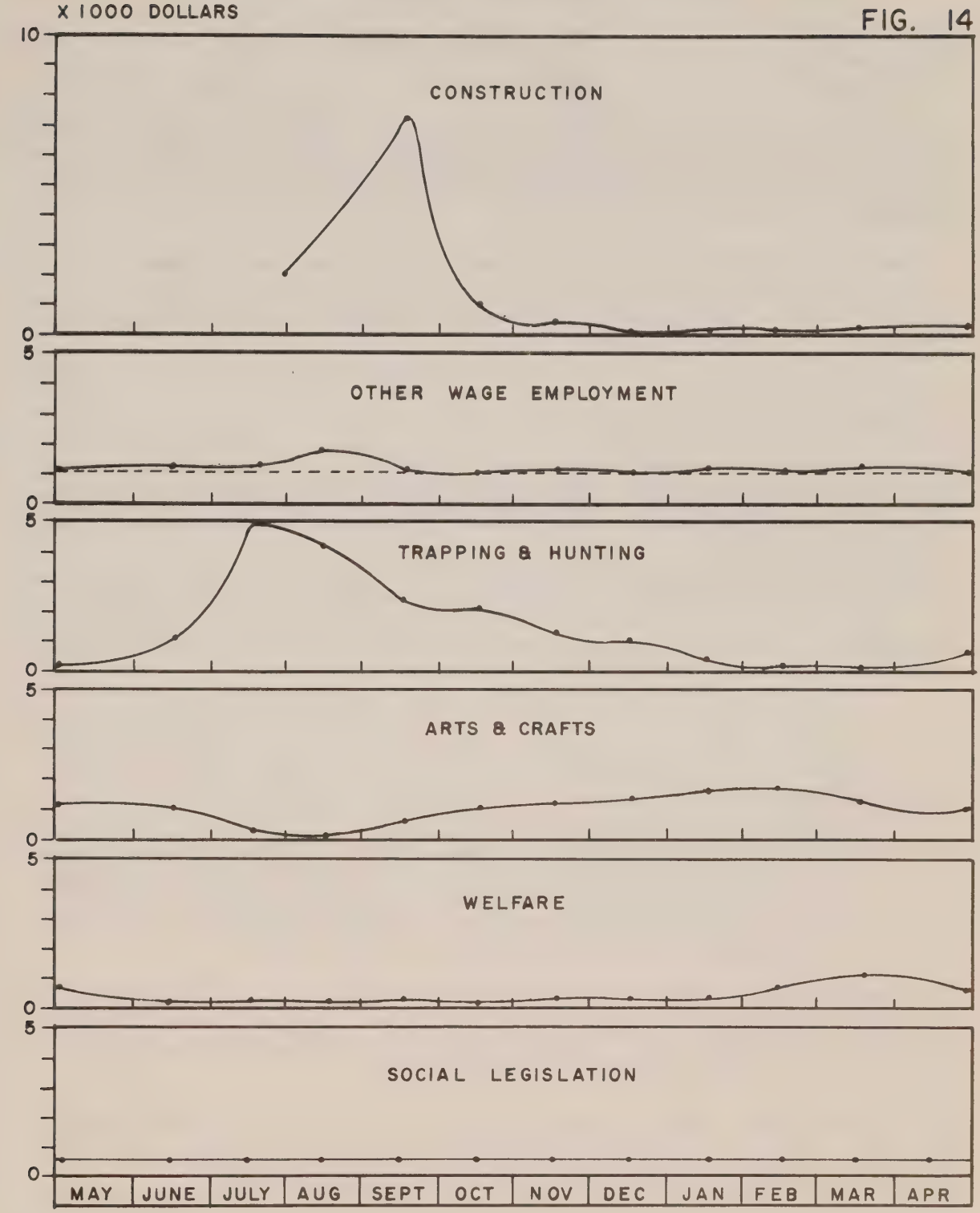


TABLE 46

Year 1964/65	gallons	2,600
Year 1965/66	gallons	9,000
Year 1966/67	gallons	13,000

A count of the drums unloaded from ships in the late summer of 1967 showed that approximately 40,000 gallons would be on hand for the 1967/68 year. This large increase is due, undoubtedly, to the new low-rental houses.

As heating fuel is included in the rents struck for these houses, the H.B. Co. will be reduced to fuel oil sales to camp dwellers who are not included in the low-rental housing scheme while they remain in camps.

Consumption of Electric Power

Electricity was made available to all buildings in the community from a common source in 1966 when the new distribution system was installed. The average consumption of diesel fuel for the years 1965/66 and 1966/67 was 5,000 gallons.

Using the conversion formula stated for Cape Dorset, but with a five per cent line loss, the power consumption was approximately 47,500 KWH per annum. In view of the new construction during 1967, an appreciable increase in consumption might be anticipated.

NOTTINGHAM ISLAND

Nottingham Island is the site of a D.O.T. marine weather station which operates the year round. The operation and composition of the station are discussed elsewhere in this report. The station occupies a place in the economy through its employment of two Eskimo families at the site. there are no Eskimos permanently resident on the island.

The weather station has an annual operating budget in the order of $75,000 but only $3,180 devolves upon the area as direct income from wages paid to area resident families. In addition to wages, the families receive free housing and other material considerations.

The reimbursement structure used by the D.O.T. differs from that employed by other Government agencies in the north as will be evident in the table depicting income for the families employed at the station.

TABLE 47

FAMILY INCOME

Family No.	Annual Wage	Annual Allowances Persons Over 12 yrs.	All.	Persons Under 12 yrs.	All.	Annual Total
1	840	5	2,100	1	240	3,180
2	840	3	1,260	4	960	3,060

Source: D.O.T., Frobisher Bay, N.W.T.

Both husband and wife account for the annual wage indicated in the table. In addition to the sums shown, the D.O.T. disperses some $2,000 to Eskimos during the shipping season for ship unloading. This, however, is paid to Eskimos from Sugluk who travel to Nottingham Island for this purpose.

Family number one in the table originates from Cape Dorset and the second from Sugluk. It was understood that the families change about each two years.

RESOLUTION ISLAND

The Marconi Company operates a multi-purpose detection and communication system on the island under agreement with the U.S.A.F. and the D.O.T., the details of which were not available. The operating budget for the D.O.T. personnel is roughly $48,000 per annum, none of which enters into the economy of the survey area. There are no Eskimos on the island.

CHAPTER 7

NATURAL RESOURCES

INTRODUCTION

The object of this chapter is to impart some appreciation of the natural resources of the area and to demonstrate the current status of their exploitation and utilization in relation to the local economy. In order to do this usefully, it is necessary to provide a brief introductory discussion to isolate the resources of importance to the Eskimo and to explain the framework within which these resources are harvested.

The spectrum of natural resources falls readily into the two-fold division of renewable and non-renewable resources. For the present at least the former is the more important to the local economy. Because the area is situated well above the tree-line and water is generally in plentiful supply,* the treatment of the renewable resources is restricted to local fauna. Of the non-renewable resources, only serpentine (soapstone) and perhaps one or two other minerals are of importance to the present day local economy.

The Eskimo, because of his lengthy presence and reliance upon the local fauna resources for his subsistence, enjoys certain rights with respect to their harvesting which are not enjoyed by any other ethnic group in the country.

The basic tenets of all Orders in Council and Regulations of the N.W.T. and Acts of the Federal Government affecting the harvesting of fauna have to do with the preparation of the fauna species and the protection of the Eskimo's right to kill fauna for food for himself and his family. The onus is rightfully placed upon the Eskimo hunter to ensure that edible animal parts are not left behind or destroyed.

By the time the authorities had involved themselves with the Eskimo society in a serious way, however, the trading economy was already well established in the area and skins and furs were providing a means of livelihood which transcended the quest for food alone. The constant challenge to the laws governing harvesting is, therefore, one that must continually consider the Eskimos' needs in country food and income through trading together with the capacity of the several species to maintain their populations at a desired level. Much valuable work on fauna populations and habits has been done by the Fisheries Research Board and the Canadian Wildlife Service and their continuing work will undoubtedly bring about further changes to the Eskimos' habits relative to the utilization and exploitation of the fauna resources.

The Eskimo is not visibly oriented toward conservation and, perhaps, does not fully understand its full implications. In this connection, however, it would seem only fair to add that he has had longer exposure to non-Eskimos unconcerned about conservation than to those seriously concerned about it.

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* Freshwater systems in the south-coast region do not suggest a power potential of economic significance. Potable water is generally abundant but problems associated with it such as its impounding and distribution are locally important and are alluded to in other chapters of the report.

In recent years the survey area was affected by restraints imposed on the harvesting of two species of fauna, and by a general re-emphasis on the avoidance of outright waste. The demand, and attendant high price, for Polar Bear skins aroused concern about the effect on its population, which has resulted in a restrictive quota being established for each settlement with a prior history of harvesting the bear. In accordance with the quota, Cape Dorset Eskimos are limited to a total harvest for 1967 amounting to six bears, and Lake Harbour Eskimos are entitled to three. Eskimos generally are entitled to harvest seven walrus, but not unconditionally, as noted later.

The enforcement of the Ordinance, Regulations and various Acts is, for all practical purposes, the responsibility of the Royal Canadian Mounted Police and the Area Administrators. One need not look far in this report to realize that enforcement is a virtually impossible task over much of the study area which, in this regard, is serviced by five persons who may be augmented from time to time by other appointees. In spite of these circumstances, enforcement works well; due in no small part to the Eskimo's increasing awareness that much of the concern surrounding these resources is there for his benefit.

It would be irresponsible to say that harvesting is not attended by waste and that many of the fauna species are shot and killed when there is no possibility of recovering much of the carcass. There is a tendency on the part of the Eskimo to take more game than he requires but comparatively small numbers of fauna are involved and mitigating circumstances are often present.

In 1967 the laws applicable to the harvesting of economic fauna in the Northwest Territories set out the following rights and restraints for the Eskimos inhabiting the survey area;

Government of the Northwest Territories

Ordinance and Regulations

Eskimos engaged in the taking of fauna must be in the possession of a General Hunting Licence. The licence is issued free of charge by the R.C.M.P. to males of age sixteen years and over. It may be assumed that all eligible males apply for and receive a licence. The licence carries with it the obligation for its holder to record all kills of all species in a small tally book which accompanies each licence.

Polar Bear - A limitation of six for Cape Dorset and three for Lake Harbour is prescribed. Restricted to the male of the species, and females without cubs less than one year old.

Caribou - No limit prescribed as to the number of kills, but the hunter must utilize all parts of the animal considered fit for human consumption. Males and females of the species may be taken but must be over one year old. The animal may be hunted at any time of the year.

Fox - No limitation on numbers. The fox is taken only for its fur and may not be trapped or hunted during other than the open season (1 November/15 April).

Migratory Birds - May be hunted only during the open season (1 September/31 October). Limit: 25 ducks and 15 geese daily. Applicable to all residents of the N.W.T.

The Federal Government

Fisheries Acts and Regulations

Ringed & Bearded Seals - The Act appears not to restrict the Eskimo in the harvesting of seals as to their numbers, sex or age in either species, at any time.

Walrus - An Eskimo may kill seven walrus in one year as food for himself, his family or his dogs. The hunting of walrus on Nottingham Island, which is quite accessible to Cape Dorset Eskimos, must be conducted under the supervision of the R.C.M.P. The Eskimo is specifically required to report the walrus killed by him to the R.C.M.P.

Whales - The white whale, or Beluga, may be killed by the Eskimo, apparently without restriction, for his own domestic use and for feeding his dogs. The narwhal does not appear to be covered by the regulations.

Hunting by Whites - Resident, Non-Resident & Alien

Under the various Ordinances, Acts and Regulations the non-Eskimo is permitted to engage in hunting in a limited way His position with respect to the several species may be stated as follows:

Ringed Seals - A limit of two in a licence year. The licence fee is - resident $10.00; non-resident $20.00; alien $25.00

Bearded Seals -Hunting prohibited.

Walruses - Hunting prohibited.

White Whale (Beluga)- Limit of two in a licence year. The licence fee is: resident $10.00; non-resident $20.00; alien $40.00.

Polar Bear - Hunting prohibited.

Caribou - Hunting prohibited

Char & Lake Trout - A limit per day of five of each is allowed. The licence fee is: resident $1.00; non-resident & alien $2.00.

Geese - The specified limits and licence fees are: residents 15 geese, $2.00; non-residents 5 geese, $5.00; aliens $10.00. The possession limit for non-residents and aliens is 10 geese.

Ducks - For this bird the licence fees are as specified for geese. The limits are: resident 25; non-resident and alien 8 with a possession limit of 16 ducks.

Mining

Reference was made earlier to mining activity engaged in by the Eskimos and it will be clear in the chapter on the economy that non-renewable resources of the mineral class are indirectly an important source of income. So far the mining of serpentine has taken place without observance of the formalities prescribed under the Canada Mining Regulations.

It is perfectly understandable why in the past the Eskimos have not been encouraged to stake claims in order to protect themselves and their deposits. The reason perhaps stems from the Eskimos' treatment of resources as the property of all. In this context the concept of individual ownership would be incomprehensible to the Eskimo. Another reason may stem from the fact that, considered in terms of contemporary mining endeavours, Eskimo operations in the field might be classed as micro-activities concerning a mineral of little interest to anyone else.

What is true for the past, however, is not necessarily true today regarding this kind and scale of mining activity. The Eskimos having placed themselves on a business footing through their co-operative organizations, recognize that certain qualities of serpentine are desirable and command higher prices than others. Therefore, they are ranging farther to acquire the most suitable serpentine, and are considering the mining of other minerals as well.

In circumstances such as these there is a clear need to encourage the staking* of claims to protect the right of discovery with regard to serpentine and other minerals should they prove to be helpful to the local economy.

RENEWABLE RESOURCES

The report uses four principal divisions in its treatment of these resources. They are: Distribution and Economic Categories; Harvesting; Utilization and, finally, Exploitation. The report draws principally on the work of the Fisheries Research Board carried out by McLaren, Mansfield and Loughrey covering the marine mammals which are of prime importance to the economy.

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* Following the preparation of this report mining licences were applied for and issued to certain members of the W.B.E.C. for the purpose of staking a number of the serpentine occurrences along the south coast.

Numerical data on harvests were extracted from the fur returns submitted to the Territorial Authority by the area traders. The missing link, i.e., kills not traded, were supplied by the R.C.M.P. who make an important contribution by the recording of these data. The task of doing this is not a simple one and it is rarely possible to obtain a fully completed tally because the Eskimo's memory and recording habits must be relied upon over a period of a full year. Because of this, errors attend the tallys but they are nonetheless valuable and give reliable orders of magnitude.

Distribution and Economic Categories

The companion Map 7 shows the general distribution of the economic fauna in the subject area. Several other maps are indexed on this distribution map which appear on a larger scale in the section on harvesting.

Ringed and Bearded Seals

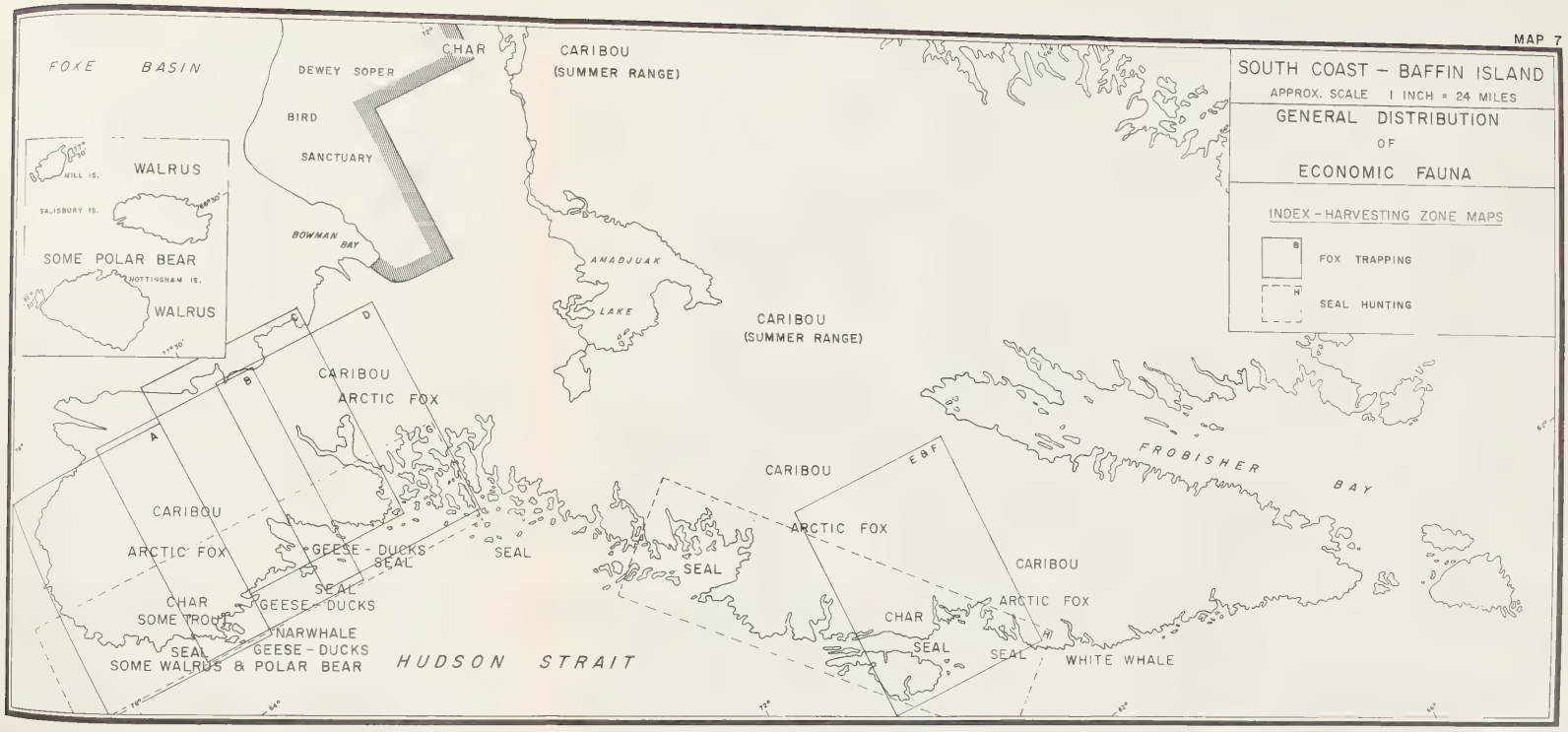
These, the most important animals in the local economy, are rather well dispersed along the coast-line between Resolution Island, and Cape Dorchester on the northern tip of the Foxe Peninsula. Population density patterns may be related to the type of coastline, i.e., the more complex coastlines are the preferred breeding localities. McLaren (1958:28) and Mansfield (1967:23) give both the reasons and the supporting population data. The coastal region possessing the greatest population is situated between Fair Ness and, roughly, Schooner Harbour on the west coast of the Foxe Peninsula. The major part of the coastal region discussed above is covered by harvesting Map "G". The seal population from Fair Ness to Resolution Island is more thinly spread and the best density is in the coastal sector covered by harvesting Map "H". That part of the coast immediately south from Amadjuak Lake is one of high density but clearly is a considerable distance from both population centres and is not regularly harvested.

Very local changes in density might be expected as a result of over, or under harvesting, but there seems to be no reason to suspect that the general pattern of distribution is likely to change markedly from what it is today.

Walrus

One of the largest walrus concentrations in the eastern Arctic is around the Southampton-Salisbury-Nottingham Islands group situated just south from Cape Dorset. This concentration is referred to by Loughrey (1959:78) as part of Stock No. 2. A second and quite small population is located about the Middle Savage Islands, mid-way between Resolution and Big Islands. The early economy of several permanent camps in this locality was founded on the walrus*. Walrus Stock No. 2 will drift on ice pans along the coast of the Foxe Peninsula, past Cape Dorset as far as Andrew Gordon Bay; while some of those from around the Middle Savage Islands will occasionally drift on pans to the vicinity of North Bay near Lake Harbour.

* It is of passing interest to mention that an elderly Eskimo of Lake Harbour who lived in one of the camps near the Middle Savage Islands as a young man recounted to the survey that the camps were eventually abandoned due to the development of an unusually aggressive attitude in the walrus.


SOUTH COAST – BAFFIN ISLAND
APPROX. SCALE 1 INCH = 24 MILES
GENERAL DISTRIBUTION
OF
ECONOMIC FAUNA
INDEX – HARVESTING ZONE MAPS
B
FOX TRAPPING
H
SEAL HUNTING
FOXE BASIN
DEWEY SOPER
CHAR
CARIBOU
(SUMMER RANGE)
BIRD
SANCTUARY
BOWMAN BAY
AMADJUAK
LAKE
CARIBOU
(SUMMER RANGE)
WALRUS
MILL IS.
SALISBURY IS.
SOME POLAR BEAR
NOTTINGHAM IS.
WALRUS
CARIBOU
ARCTIC FOX
A
B
C
D
E
F
G
H
CARIBOU
ARCTIC FOX
GEESE - DUCKS
SEAL
SEAL
SEAL
CHAR
SOME TROUT
GEESE - DUCKS
NARWHALE
SEAL
GEESE - DUCKS
SOME WALRUS & POLAR BEAR
HUDSON STRAIT
CARIBOU
ARCTIC FOX
SEAL
CHAR
SEAL
CARIBOU
ARCTIC FOX
SEAL
WHITE WHALE
FROBISHER BAY

White Whales and Narwhal

They are comparatively far ranging animals and cannot really be discussed in terms of their distribution in the area, as was done with seals and walrus. The whales simply appear or do not appear. Large schools of the white whale are known to frequent Hudson Bay and part of the Strait but only small numbers are sighted in the subject area. This may be gleaned from the kill tally under harvesting. The south coast of Baffin Island would not appear to offer feeding grounds comparable to Hudson Bay so other circumstances may be responsible for the appearance of these whales. One cause, but not necessarily responsible in all cases, is the presence of killer whales. When the latter are present, the whales will usually head for shallow coastal water where they cannot be reached by this predator.

The killer whale seems to be the best way to explain the appearance of a large herd of narwhal in shallow water in sight of Cape Dorset in July of 1966. This whale is considered to be rare in the area. Much more will have to be known about the movements of these whales along the south coast before anything meaningful can be stated about their distribution. Inasmuch as a few are taken each year, their presence is noted on the distribution map.

Arctic Char

This fish enjoys wide distribution throughout the area and few streams of reasonable size are without a population, however small. The largest char population known in the south central part of Baffin Island is located in the Nettilling Lake/Koukjuak River system, just to the north of the Dewey Soper Bird Sanctuary shown on the distribution map. There are no fresh water systems nearly approaching its size elsewhere in the subject area and populations, therefore, are small by comparison.

Caribou

This animal is widely dispersed in the area during the winter when it occupies the higher ground for feeding purposes. In the summer months the animals are to be found in the calving and grazing ranges of which two major ones are noted. The first includes most of the large Nettilling-Amadjuak Basin and the second is thought to consist of the Grinnel Lowland which trends from Amadjuak Lake to Frobisher Bay. Population studies have not been carried out to the extent they have on the mainland and the animals' numbers are not known. A figure of 25,000 or more has been suggested for the whole of Baffin Island and this would seem reasonable.

Arctic Fox

The fox is found in several varieties and is dispersed over the entire area. There does not appear to be a distribution pattern that favours especially one particular locality over another. The ecology of the fox is tied directly to the lemming which, itself, is widely distributed. What is said is perhaps best borne out by examining the harvesting Maps "A" through "F" which depict trapping zones so arranged as to take best advantage of the conditions that

affect travel and support, rather than taking into account possible distribution patterns.

Polar Bear

The bear is of random distribution and finds its principal concentration in the region around Southampton Island to the south. Small numbers appear to enter the area at the Foxe Peninsula, and some have been known to enter the confines of Cape Dorset settlement. A very few turn up in the vicinity of Lake Harbour and are thought to have drifted on the pack-ice from more westerly points. The bears rarely roam far inland and prefer the ice.

Geese and Ducks

These game birds are distributed in large numbers near the edge of the fast-ice in June when pools of water have formed on the ice and leads have opened. Geese use the pools as stop-over points en route to their principal nesting area at the Dewey Soper Bird Sanctuary near Bowman Bay. Ducks nest in substantial numbers on the numerous coastal islands and are particularly dense from Cape Dorset to Chorkbak Inlet.

Ptarmigan

This bird enjoys wide distribution in the area and is non-migratory.

The Economic Categories listed in the text which follows are intended to show where each of the important species of fauna fits into the Eskimo economy.

The categories are designated by letter symbols which require some explanation: CI opposite a species indicates that it contributes to cash income; CF - a contributor to the country food supply, and CO - a contributor to Eskimo personal clothing and other requirements.

TABLE 48

Ringed Seal (Pusa hispida)	CI	CF	CO
Bearded Seal (Erignathus barbatus)	CI	CF	CO
Walrus (Odobenus barbatus)	CI	CF	-
White Whale (Delphinapterus leucas)	-	CF	-
Narwhal (Monodon monoceros)	CI	CF	-
Arctic Char (Salvelinus alpinus)	CI	CF	-
Caribou (Rangifer arctica)	-	CF	-
Arctic Fox (Alopex lagopus)	CI	-	CO
Polar Bear (Ursus maritimus)	CI	-	CO
Geese (var.)	-	CF	-

Ducks (var.)	-	CF	-
Ptarmigan (Lagopus mutus & L. lagopus)	-	CF	-

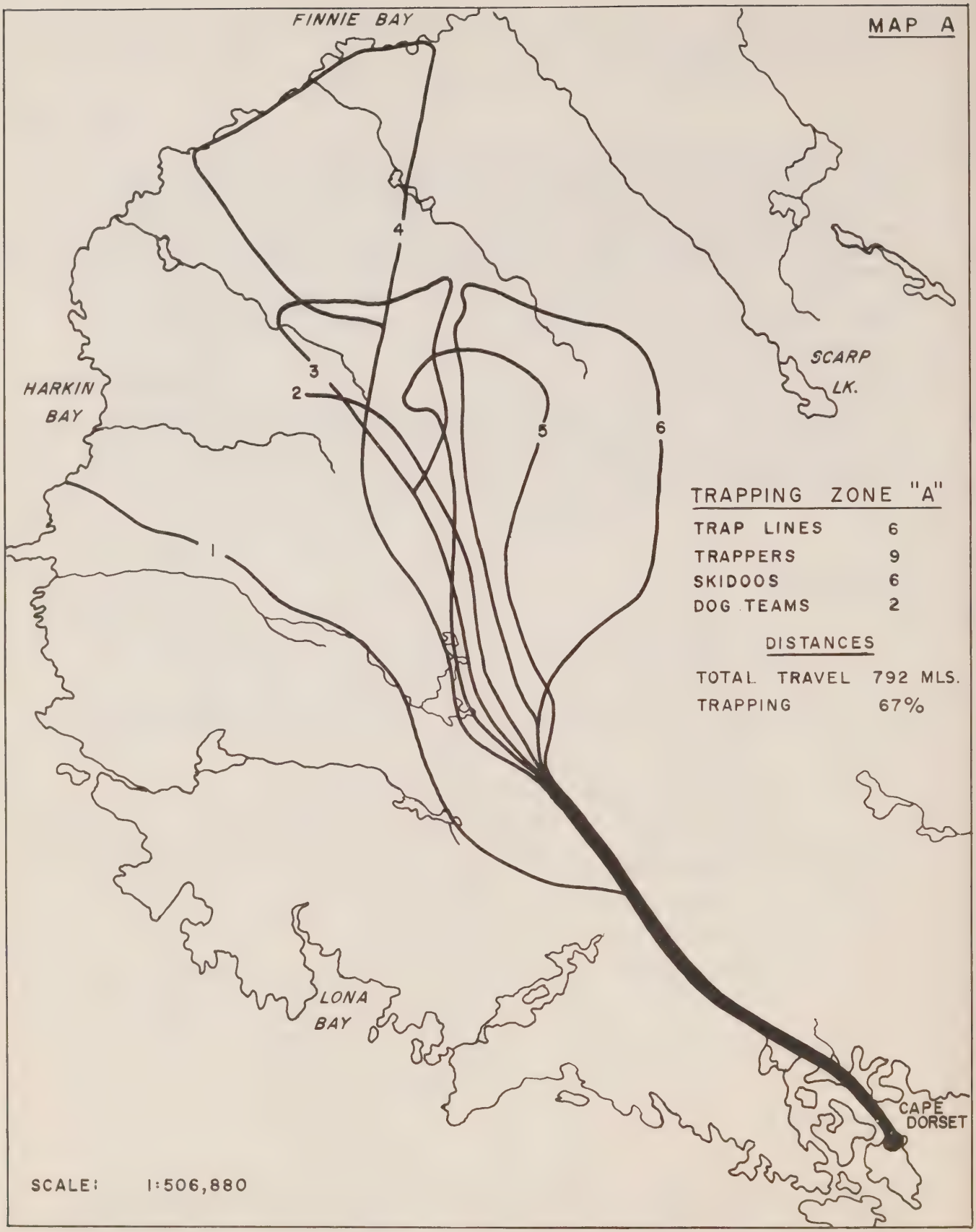
With so many species of fauna recurring under each of the categories, some order of relative importance is implicit. The arrangement that follows attempts to fix this as it was thought to be in 1967. The arrangement is columnar only and lateral relationships are not attempted because a completely reliable monetary valuation for CF and CO cannot be found. Obviously, it is necessary to relate to a time and place; especially where CI and CF are concerned. For example, under CI, fox might be expected in the coming two years to occupy the top position in that column while the seals would occupy the second position of importance. This could be looked for at Cape Dorset, but is unlikely to occur at Lake Harbour where the fox is harvested in substantially smaller numbers. However, changing price levels alone are capable of producing shifts in the CI column. The order under CF is arrived at by the yield of each species in country food in pounds for 1966-67.

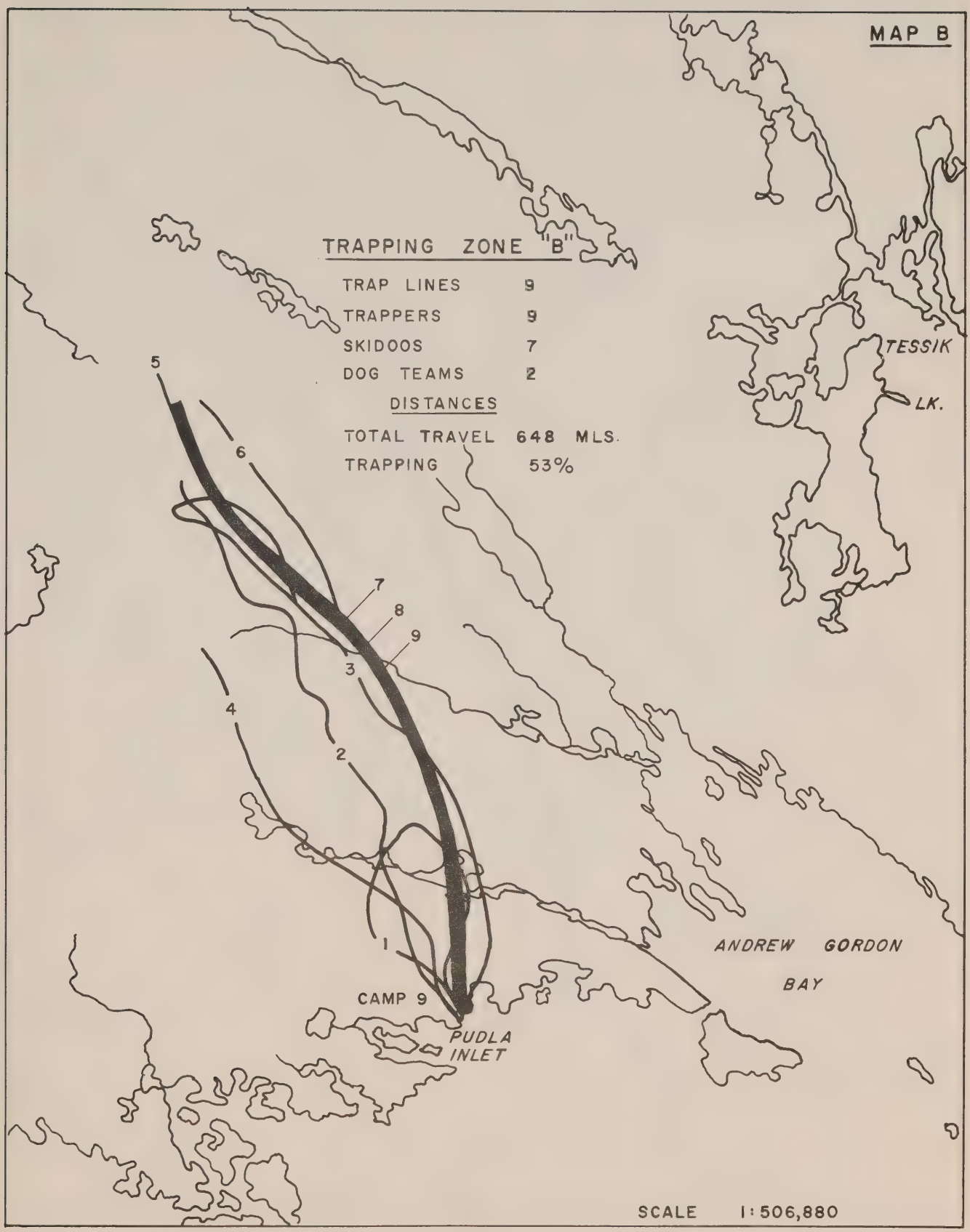
TABLE 49

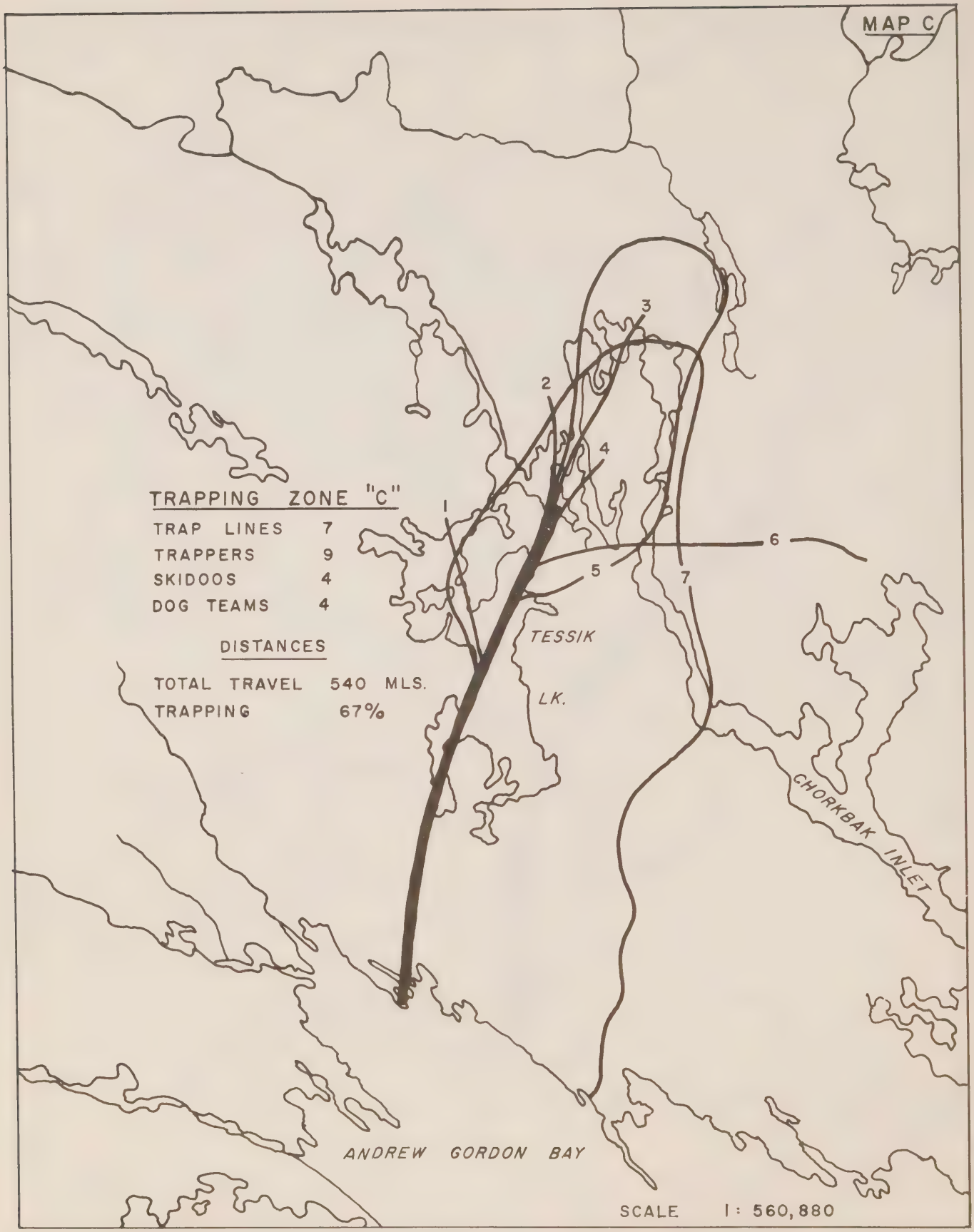
	CI	CF	CO
Cape Dorset	Ringed Seal	Ringed Seal	Ringed Seal
	Bearded Seal	Walrus	Bearded Seal
	Fox (white)	Caribou	Caribou
	Polar Bear	Bearded Seal	Fox
	Char	Char	Polar Bear
	Walrus	Whales	
	Narwhal	Geese and Ducks	
		Ptarmigan	
Lake Harbour	Ringed Seal	Ringed Seal	Ringed Seal
	Bearded Seal	Bearded Seal	Bearded Seal
	Fox (white)	Caribou	Caribou
	Polar Bear	Whales	Fox
		Char (?)	Polar Bear
		Geese & Ducks (?)	
		Ptarmigan (?)	

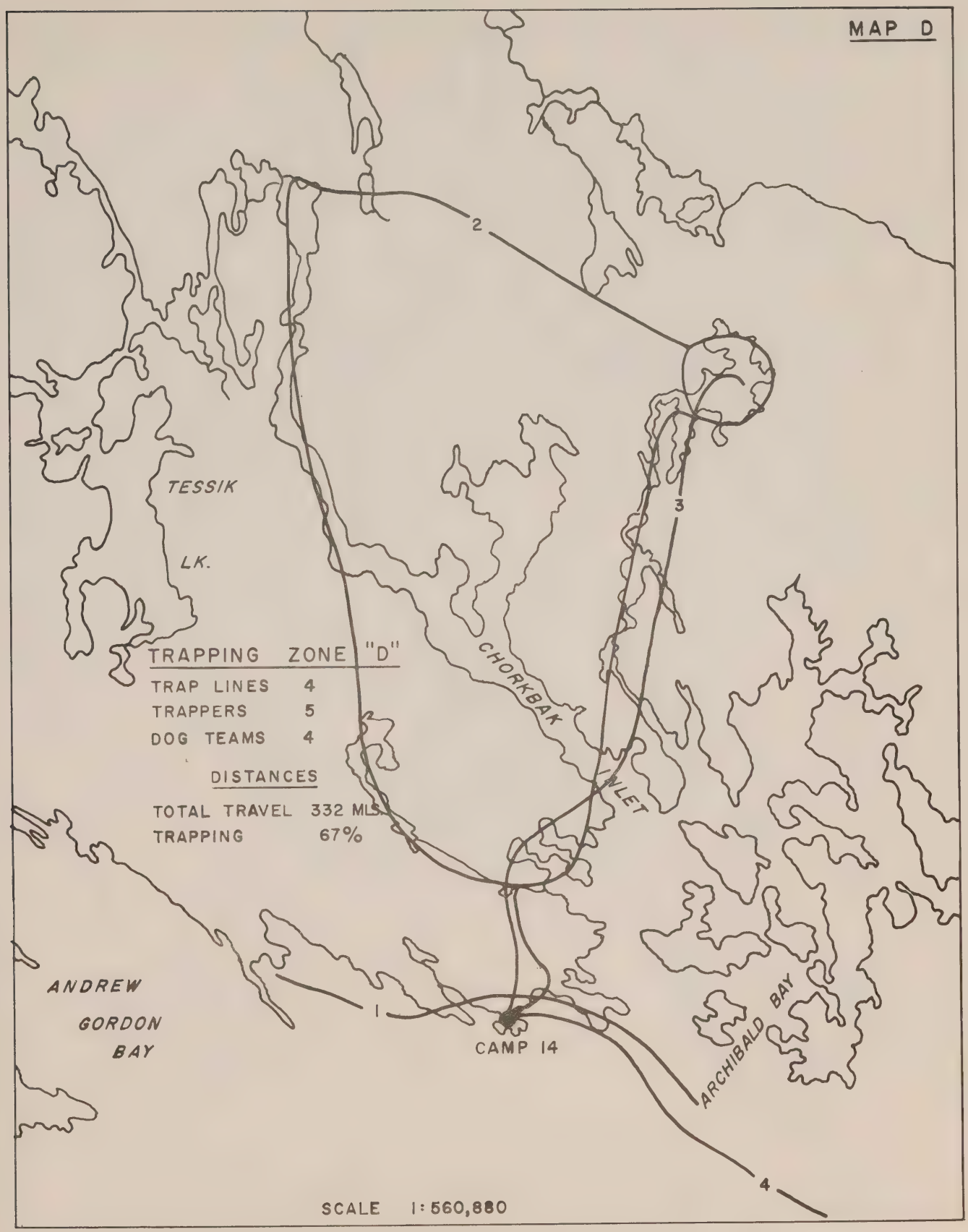
Harvesting

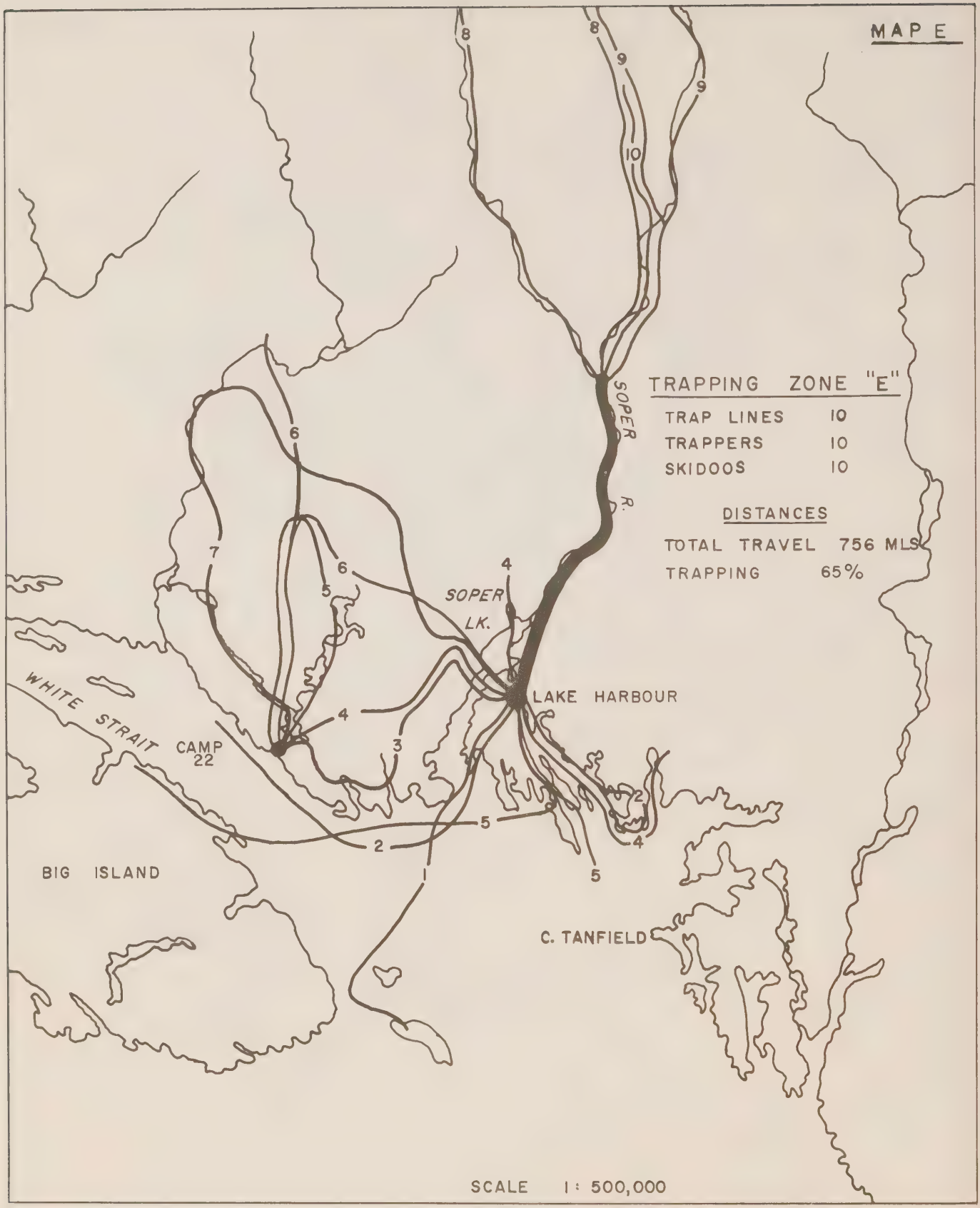
Several companion maps and tables are introduced at this juncture to illustrate the harvesting patterns that exist in the area for those fauna species of importance to cash income. The tables that correspond closely to the harvesting maps are numbers 50 & 51 which recapitulate harvesting over a period of years terminating in the year 1966-67. The data contained in them have a good degree of accuracy.

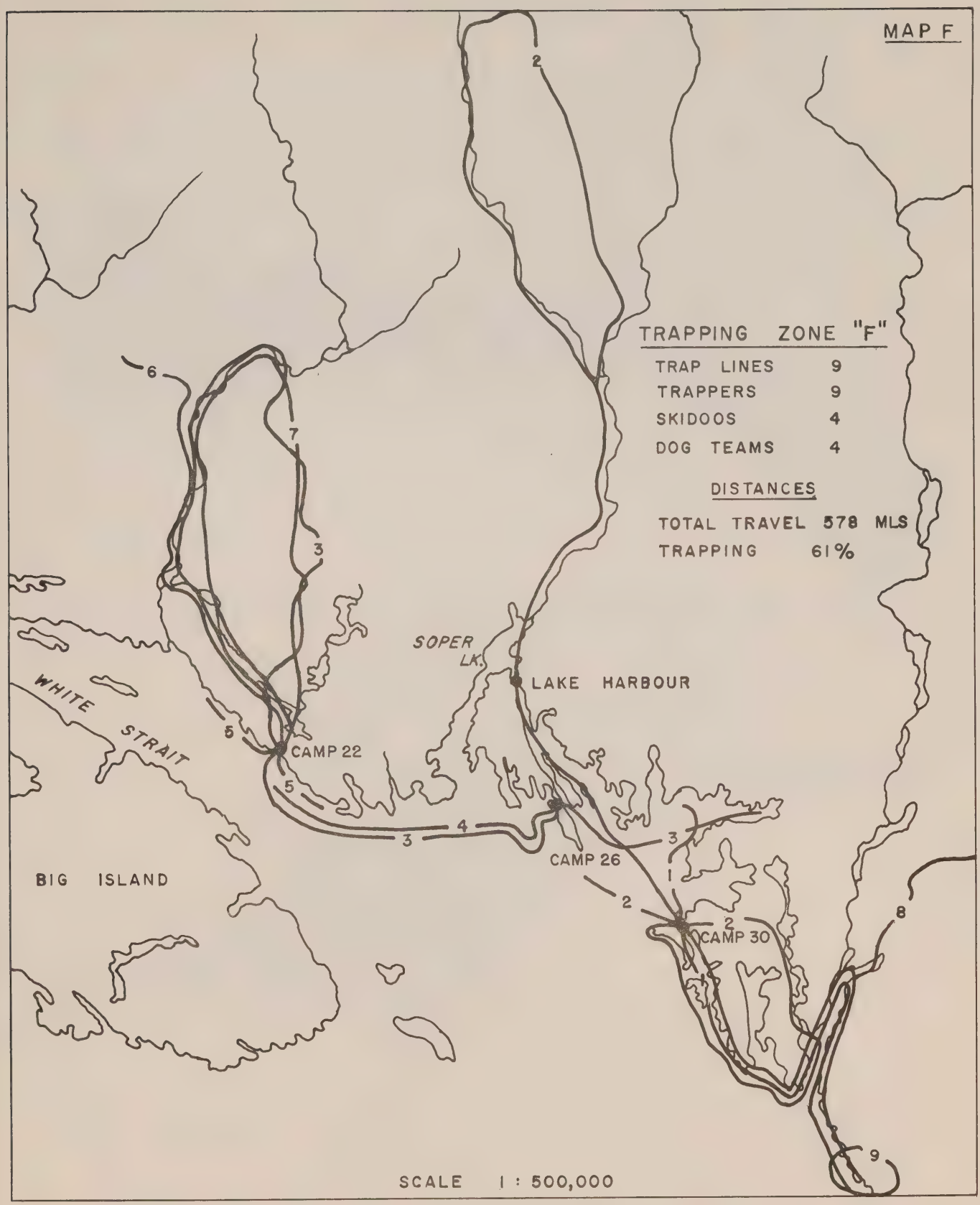

MAP A
FINNIE BAY
HARKIN BAY
SCARP LK.
LONA BAY
CAPE DORSET
1
2
3
4
5
6
TRAPPING ZONE "A"
TRAP LINES 6
TRAPPERS 9
SKIDOOS 6
DOG TEAMS 2
DISTANCES
TOTAL TRAVEL 792 MLS.
TRAPPING 67%
SCALE: 1:506,880


MAP B
TRAPPING ZONE "B"
TRAP LINES 9
TRAPPERS 9
SKIDOOS 7
DOG TEAMS 2
DISTANCES
TOTAL TRAVEL 648 MLS.
TRAPPING 53%
TESSIK
LK.
5
6
7
8
9
3
4
2
1
CAMP 9
PUDLA
INLET
ANDREW GORDON
BAY
SCALE 1:506,880


MAP C
TRAPPING ZONE "C"
TRAP LINES 7
TRAPPERS 9
SKIDOOS 4
DOG TEAMS 4
DISTANCES
TOTAL TRAVEL 540 MLS.
TRAPPING 67%
1
2
3
4
5
6
7
TESSIK
LK.
CHORKBAK INLET
ANDREW GORDON BAY
SCALE 1 : 560,880


MAP D
TESSIK
LK.
TRAPPING ZONE "D"
TRAP LINES 4
TRAPPERS 5
DOG TEAMS 4
DISTANCES
TOTAL TRAVEL 332 MLS
TRAPPING 67%
CHORKBAK
INLET
ANDREW
GORDON
BAY
CAMP 14
ARCHIBALD BAY
1
2
3
4
SCALE 1:560,880


MAP E
TRAPPING ZONE "E"
TRAP LINES 10
TRAPPERS 10
SKIDOOS 10
DISTANCES
TOTAL TRAVEL 756 MLS
TRAPPING 65%
SOPER R.
SOPER LK.
LAKE HARBOUR
WHITE STRAIT
CAMP 22
BIG ISLAND
C. TANFIELD
SCALE 1 : 500,000


MAP F
TRAPPING ZONE "F"
TRAP LINES 9
TRAPPERS 9
SKIDOOS 4
DOG TEAMS 4
DISTANCES
TOTAL TRAVEL 578 MLS
TRAPPING 61%
SOPER LK.
LAKE HARBOUR
WHITE STRAIT
CAMP 22
CAMP 26
CAMP 30
BIG ISLAND
SCALE 1 : 500,000

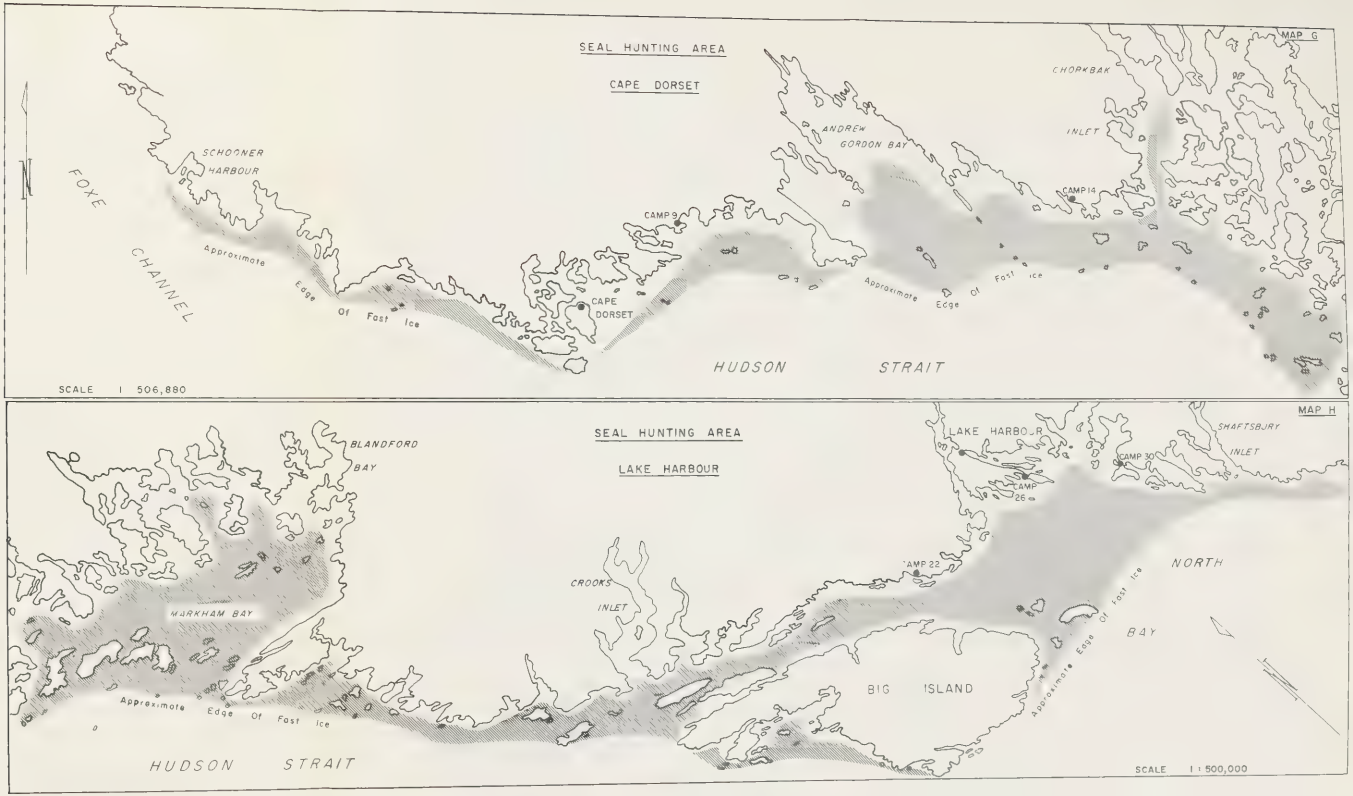

MAP G
SEAL HUNTING AREA
CAPE DORSET
N
FOXE CHANNEL
SCHOONER HARBOUR
Approximate Edge Of Fast Ice
CAMP 9
CAPE DORSET
ANDREW GORDON BAY
CHORKBAK INLET
CAMP 14
Approximate Edge Of Fast Ice
HUDSON STRAIT
SCALE 1 506,880
MAP H
SEAL HUNTING AREA
LAKE HARBOUR
BLANDFORD BAY
MARKHAM BAY
Approximate Edge Of Fast Ice
CROOKS INLET
LAKE HARBOUR
CAMP 26
CAMP 30
SHAFTSBURY INLET
CAMP 22
NORTH BAY
BIG ISLAND
Approximate Edge Of Fast Ice
HUDSON STRAIT
SCALE 1:500,000

TABLE 50

HARVEST-EXPLOITATION TABLE FOR SEALS

Year & Area	Bearded Seal	Ringed - Seal		Total - Traded		Retention All.		Sinking Factor	
		S. Jar	C. Jar	Bearded	Ringed	Bearded 5%	Ringed 10%	20% of Bearded	82% Ringed
CAPE DORSET									
		(undifferentiated)							
1961-62	56	(652)		56	652	59	717	68	834
1962-63	171	(1964)		171	1964	179	2160	208	2514
1963-64	328	1050	2162	328	3212	344	3533	400	4112
1964-65	426	1711	2297	426	4008	446	4408	519	5131
1965-66	253	1411	2587	253	3998	265	4397	308	5118
1966-67	256	1526	2893	256	4419	269	4860	313	5656
LAKE HARBOUR									
		(undifferentiated)							
1961-62	77	(884)		77	884	81	972	94	1131
1962-63	164	(1895)		164	1895	172	2084	200	2426
1963-64	301	637	1453	301	2090	316	2299	368	2676
1964-65	288	882	1930	288	2812	302	3093	351	3600
1965-66	184	938	1424	184	2316	193	2547	224	2964
1966-67	128	868	1270	128	2138	134	2351	156	2736

NOTE: Sources of Data - Trade counts, N.W.T. returns, D.I.A. & N.D.; Retention allowance, R.C.M.P. and others, (estimated); Sinking Factors, McLaren (1958:71)

TABLE 51

HARVESTING OF WHITE FOX

Year & Area	Quantity Traded	Quantity Retained	Total
CAPE DORSET			
1961-62	555		
1962-63	59		
1963-64	1402	unknown	unknown
1964-65	1845		
1965-66	193		
1966-67	260	89	349
LAKE HARBOUR			
1961-62	485		
1962-63	11		
1963-64	239		
1964-65	490	unknown	unknown
1965-66	46		
1966-67	54		

Source: N.W.T. fur returns, D.I.A. & N.D.

TABLE 52

GENERAL TALLY OF SPECIES

Year & Location	Polar Bear	Caribou	Ptarmigan	Geese	Ducks	Walrus	White Whale	Narwhale	Arctic Char	Trout
CAPE DORSET										
1962/63	n/r	120	not	recorded	n/r	30	not	recorded	n/r	n/r
1963/64	4	120	"	"	n/r	40	"	"	n/r	n/r
1964/65	8	80	"	"	n/r	20	"	"	n/r	n/r
1965/66	6	n/r	"	"	n/r	n/r	"	"	n/r	n/r
1966/67	6	368	1238	244	785	34	15	73	3676	43
LAKE HARBOUR										
1962/63	2	41	not	recorded	n/r	4	13	not	recorded	n/r
1963/64		45	"	"	n/r	3	5	"	"	n/r
1964/65	7	30	"	"	n/r	1	20	"	"	n/r
1965/66	6	80	"	"	n/r	1	20	"	"	n/r
1966/67	3	92	"	"	n/r	100 *	12	"	"	n/r

Source: Royal Canadian Mounted Police, Cape Dorset & Lake Harbour Detachments

* This figure represents the number of walrus taken on a hunt conducted by two parties of Eskimos on Nottingham Island in 1966. An investigation into the circumstances was conducted by the R.C.M.P. in 1967 due to the unsupervised nature of the hunt which contravenes Sec. 5 of the Walrus Protection Act. Nottingham Island is under the jurisdiction of the Lake Harbour Detachment and the kills made there appear in the game reports originated by the Detachment.

Table 52 is a general tally to cover fauna species other than the seals and fox. The tally, unfortunately, is incomplete for many of the species but is, nevertheless, valuable in the case of the larger animals. It is to be hoped that those compiled in the future will be as complete as the one recorded at Cape Dorset for 1966-67 which was extremely helpful.

Harvesting implies the participation of people generally classed as hunters, but it is difficult to define a hunter in a settlement such as Cape Dorset. In some of the more remote and less advanced communities of the Archipeligo where wage labour is negligible in the economy, the definition is quite clear; one or more eligible male members of a family are engaged in harvesting full-time or otherwise are dependent upon welfare or have developed an acceptable combination of both.

Lake Harbour is not far removed from the description offered above, and if construction were removed from the economic scene, the definition "hunter" could reasonably be applied to most males between eighteen and sixty years of age. At Cape Dorset, with its better development in cash income pursuits, it becomes difficult to name a yardstick by which it is possible to determine accurately at what point a general licence holder becomes a "hunter" in the context of harvesting.

If measured by income it is found that many of the best harvesters earn more at other pursuits. Moreover, in still other instances, some classed as hunters by reason of the amount of time they are theoretically supposed to spend at hunting do not, in fact, always spend much time at it.

There exists the possibility that many Eskimos presently classed as hunters are so classed because there is no other occupational tag that can be suitably affixed. Any attempt to classify hunters in absolute numbers according to the degree of their involvement, or by any other means, would, in the circumstances be grossly misleading.

It will suffice to say, therefore, that every licence holder is potentially a hunter and is thought to contribute in some degree to the harvest. The table depicting gross family income in the chapter on the economy will give some idea of the hunting activity of each family during the period to which it corresponds. The harvesting activity of these same families could change markedly in subsequent periods.

Trappers are far less difficult to consider, largely because it is an arduous undertaking and fewer engage in it. Roughly thirty-two Eskimos at Cape Dorset are engaged in trapping; and about nineteen of Lake Harbour are likewise engaged. It would not be proper to say that these numbers are absolute because there is always the possibility of a trapper working more than one trapping zone; a fact that may have been missed in the processes of interpreting from Eskimo to English. It is unlikely that more than two or three trappers at the most could have been added because of this, so the effect can be considered negligible.

Hunting

Seals - Maps "G" and "H" depict harvesting belts for the seals. It should be clear that map "G" refers to the Cape Dorset harvesting area, and map "H" to the Lake Harbour harvesting area. The hatching on the maps is intended to show the approximate edge of the fast-ice and the lateral extent of harvesting. In fact, the fast-ice extends right to the mainland shore and the seals are also hunted among the numerous islands not covered by the hatching. Finally, the narrowing and broadening of the hatched belts do not indicate localities with inferior or superior harvesting potential. One exception to this is the narrowing of the belt in front of Cape Dorset where the hunting is comparatively poor.

The methods employed in the harvesting of seals are dictated by seasonal phenomenon. Progressing from mid-winter through the summer the following methods of harvesting are employed. Breathing hole - the seal is harpooned while in its lair which is constructed over the exit from and to the water. The air enters the lair through a small hole in its roof and it is through this that the seal is harpooned. According to hunt information made available to the survey, which appears in Appendix J, this is the simplest method of hunting, but the time of year during which it occurs suggests many difficulties due to unfavourable weather conditions; also, much searching is necessary to locate the lairs. Breathing hole hunting is carried out in late December through March and part of April.

With the approach of warmer weather and longer hours of sunlight in April, the seals bask on the fast-ice surface alongside the larger breathing hole where they are shot with rifles. This is referred to as basking seal hunting. The seal, once spotted, is approached to within about one quarter mile, and from that point on must be stalked using a blind made of white cotton stretched by a light cross-frame of wood as depicted in plate 22. The seal rests its head at the hole and raises it frequently to survey the ice for signs of movement. The timing observed in a few instances averaged out to one minute for observation and roughly two minutes when the head was lowered for resting. The hunter, shielded by the blind, stops and moves to conform to the seal's movements. An approach is usually made to within 150 to 250 feet of the seal at which point the hunter sits with his rifle protruding over the top of the blind. This is done when the seal is at rest and when its head is raised for observation as the shot is fired. This type of hunting is engaged in during April through most of June.

Floe-edge hunting is the method employed in harvesting the bearded seals whose habitat is associated with moving ice. When the floe-edge is close by, hunting may take place by moving between the fast-ice and the pack-ice. When the floe-edge is at some distance, a canoe is required. The animal is usually shot while hauled up on the ice, but a harpoon is often used in conjunction with the rifle. Floe-edge hunting may be engaged in whenever the floe-edge can be approached. Records show that bearded seals are taken in most months when the fast-ice is in-situ, and during break-up. It is also taken in some numbers in the summer when open-water conditions prevail.

PLATE XXII - Eskimo preparing blind used in the stalking of seals - Chorbak Inlet.

The three methods described above require the use of ski-doos or dog teams for travel, with the occasional use of the canoe which is transported to the edge of the fast-ice for the purpose of reaching the floe-edge. The hunters are not often away more than 24 hours if the hunts are of a local nature. Several days are required when hunting near the extremities of the harvesting belts.

The last method of harvesting the seal is by open-water hunting. This usually commences about the second week of July through September and into October, weather permitting. The hunting weapon again is the rifle. High losses are encountered in seal hunting through sinkings, which reach a peak in July after a steady decrease in the animal's buoyancy commencing about April and peaking in July, followed by a progressive increase in buoyancy from then until November. The seals' fasting habit is responsible for a lowering of its blubber content.

Seal nets have been experimented with from time to time but the Eskimo remains unconvinced of its worth. The strong tidal currents near Cape Dorset would appear to indicate that iron grapple anchors are needed to hold the nets in position before their usefulness can be fully assessed. The survey undertook seal netting at Cape Dorset but the effort was not attended by success. An account appears in Appendix O. The seal net finds its best application in the harvesting of migratory seals such as the harp seal whose movements are more or less predictable.

Walrus - These animals are generally spotted while hauled up on ice pans where they are shot with rifles. If they take to the water a harpoon and rifle are generally required. The animal is butchered on the ice pan, or over the side of the canoe if killed in open water. No information regarding losses through sinkings occasioned by the hunting excursions of the Cape Dorset Eskimos is available McLaren (1959:74) quotes Meldgaard as saying that losses experienced by Igloolik Eskimos when hunting walrus on drifting pack-ice, which is the manner in which they are taken in the vicinity of Cape Dorset, was one loss for each two kills or 1:2. Losses may not be as high at Cape Dorset but there appears no reason to suspect that they might be significantly less. The walrus are harvested chiefly in the period April - July when there is considerable floating ice in the Straits off Cape Dorset. All hunting has been with canoes in recent years.

PLATE XXIII- Walrus on ice pan in the vicinity of Cape Dorset, July 1967

Whales - White whales and narwhals are harvested whenever they appear near the settlements, in the vicinity of which most are taken. They are generally approached using canoes while close inshore and are killed by a combination of rifle and harpoon. When shot indiscriminately losses usually occur through sinking. By reason of their speed canoes are about the only locally available craft fast enough to keep up with the whales which move through the water at roughly eight knots. Butchering is generally carried out on shore to where the carcasses are towed.

Polar Bear, Caribou, Geese, Ducks and Ptarmigan - With the exception of the polar bear, the remaining fauna species indicated above are harvested for their country food value. Most are taken while engaged in the harvesting of other species, e.g., caribou and ptarmigan are hunted while the Eskimo is primarily engaged in trapping, and geese and ducks are taken mainly in June and early July while engaged in seal hunting. The balance of the harvest is taken by hunters working out of the settlements and remaining permanent camps.

Polar bears are relatively scarce animals in the subject area and are perhaps encountered by chance rather than purposefully hunted. Fresh track would be enough to assure pursuit, as would a sighting. One or more dogs are highly desirable when pursuing a bear. After shooting, the animal is usually skinned where it falls and the carcass is not removed, although a limited amount of meat may be taken for the dogs.

Trapping

The white Arctic fox is the object of efforts directed to trapping, but other varieties such as red, blue and cross foxes are frequently taken in the traps. The red and cross varieties bring a low price, and most are retained by the trapper.

Some interesting harvesting phenomena are revealed by the trapping zone maps "A" through "F"; namely, the degree of divergence from the generally accepted efficiency of a looped route, allowing for traps to be set along the whole circuit. A second feature is the superposition of trap lines as depicted by the wide dark line originating in a common departure point.

The Eskimo is perfectly aware of the greater efficiency afforded by the looped trap line, as evidenced by the numbers of such lines that occur in the several zones. He has entirely valid reasons for choosing the type of routing that he does. The first and foremost of these concerns the common departure point, for each of the trapping zones and the superposition of trap lines covering at least a part of the distance travelled by most of the trappers. This reduces the chance of serious mishap through equipment breakdown or personal injury. Several trappers are usually on the lines simultaneously and there appears to be a tacit understanding that each will watch over the other.

Other factors that influence the layout of trap lines diverging from the loop are more closely related to the individual trapper and take into account his wealth, whether he is the sole provider in the family, his age, the type and state of his transport equipment, and the amount of personal risk he is willing to take.

Open-ended trap lines on which traps are set on the outward leg only, allow for the return trip to be devoted to caribou hunting, while the loop is devised to permit trap setting over its entire length, but at some expense to hunting.

In the circumstances it is doubtful if the efficiency of trapping could be improved without a detailed knowledge of the individual trapper's needs because, in the final analysis, it is these which will shape his judgement as to the best method of trapping for himself. One suggestion concerning logistical support seems indicated and appears in the text of the final chapter.

The trap lines which originate in Lake Harbour and its satellite camps are generally shorter than the ones that have been discussed in the previous paragraphs. As well, they are grouped in a contracted area and create a picture of high density trapping which very probably is working to the detriment of larger harvests.

In the Cape Dorset area, trapping usually commences with the setting and baiting of the traps which have been left on the line from the previous year. Those traps that have become inoperable through weathering are replaced at the same time. The time for this averages about eight days. The trapper then returns to the settlement for a period of roughly two weeks after which he returns to the line for a week or so for the purpose of clearing and resetting the traps. And so the cycle is complete. As might be expected, the sequence of cycles is not continuous but is punctuated by poor weather, illness, transport and other problems so that three round trips during the open season November 1 to April 15 might be considered good, and more than this, excellent.

Lake Harbour Timing

At Lake Harbour with its more densely positioned trap lines close to the settlement, the trapper makes a circuit on the average of every two weeks. This is almost twice the frequency at which the Cape Dorset trapper operates. The term cycle has special meaning for the fox as well. The animal itself is subject to a population cycle which is geared to the abundance of its chief food source, the lemming. The lemming, due to its foraging habits, has a pronounced fluctuation in its population which is transferred to the fox causing a three-year cycling in the magnitude of its numbers and, therefore, its changing availability to the trapper. This phenomenon is clearly evident in Table 51 and is consistent over long periods.

Fishing

Harvesting of the Arctic char is engaged in at two different times of the year. The first harvest is made from mid-June to the end of the first week of July when the fish run from the fresh water lakes to the sea; and the second is made when migration from the sea back to the lakes occurs about the end of August to mid-September.

The larger catches in the Dorset area are made at the mouth of the river draining the Fish Lakes some fifteen miles from the settlement. Gill nets usually of $2\frac{1}{2}$ inch mesh are strung out from the shore and are raised every couple of hours. The fish begin to spread along the shores of the inlets and bays where they continue to be netted by some Eskimos.

From mid-June until break-up the ice is in the process of deterioration and open water occurs in places making the trip to the fishing location especially difficult. A combination of ski-doo and canoe is usually necessary for the trip.

The survey spent two days at test fishing for char, but made the trip by canoe at the end of the run, and was not overly successful - having netted only 100 pounds the whole time.

As mentioned in the section on distribution, the char are available, generally in small numbers in most of the streams along the coast, and are harvested by Eskimos located in their summer camps when the fish migrations are in progress.

Utilization

The meaning attached to "Utilization" in this report relates to the disposition of the harvests and the degree of efficiency attached to utilization in the economic categories that were established earlier in this chapter. Utilization, apart from those connotations, is construed to encompass as well the potential for expanded use of the fauna resources with the object of obtaining the greatest benefit for the Eskimo.

Efficiency, or effective utilization, becomes most elusive in the sphere of country food because to deal with it at all usefully would require a comprehensive knowledge of the amount of wastage that attends hunting. This is virtually impossible to acquire for an entire harvest. One must, therefore, resort to some form of deduction based on the available data, supplemented where possible by field observations as to attitudes and problems associated with country food generally.

The capitulation that follows views the important species opposite their respective economic categories relative to effective utilization. The categories in which improvement is thought possible are shown in the final column.

TABLE 53

Species	Economic Category			Effective Utilization	Category for Improvement	
Seals	CI	CF	CO	Good	CI	
Char	CI	CF	-	Fair	CI	CF
Walrus	CI	CF	-	Poor	CI	
Whales	CI	CF	-	Poor	CI	
Caribou	-	CF	-	Poor	CI	
Birds	-	CR	-	Fair		CF
Polar Bear	CI	-	-	Good	nil	

Table 54 is introduced to show the total weight of country food represented by the 1966-67 harvest. Average weights for the Keewatin caribou were used as a means of arriving at yield because little work has been done on the caribou of Baffin Island where the animal is thought to differ slightly in size.

The wastage of country food which attends hunting, were the amount known, is a factor that would have to be subtracted from the yields appearing opposite each species in Table 54. The greatest amount of waste is probably experienced with regard to the larger animals, and may, to a large extent, be equated with the associated logistic problems. Other circumstances also play a part; such as whether the individual's purpose is to combine hunting with some other pursuit; or whether hunting is his sole purpose at the time. There is also the Eskimo's tendency to perhaps kill more than his requirements would ordinarily dictate, but this is much reduced by his increasing awareness of the need for conservation.

A judgement based on reasoning of this kind causes the survey to place the species in an order where relative wastage is implied.

TABLE 54

COUNTRY FOOD WEIGHTS - 1966-67 HARVEST

Location & Species	Kills	Edible Meat	Preferred Organs	Blubber Allowance	Total
CAPE DORSET					
Ringed Seal	4,860	94,284	12,636	8,262	115,182
Bearded Seal	269	22,784	3,120	2,071	27,975
Caribou	368	24,288			24,288
Arctic Char	3,676	9,374			9,374
Geese	244	488 (E)			488
Ducks	785	1,098 (E)			1,098
Ptarmigan	1,238	309 (E)			309
Walrus	34	31,450			31,450
White Whale	15	1,050	15	1,350	2,415
Narwhal	73	5,110	73	6,570	11,753
Total		190,235	15,844	18,253	224,318
LAKE HARBOUR					
Ringed Seal	2,351	45,609	6,112	3,996	55,717
Bearded Seal	134	11,350	1,554	1,031	13,935
Caribou	92	6,702			6,702
Walrus	(100)	(92,500)	Nottingham Island Kills (Sugluk Eskimos)		(92,500)
White Whale	12	840	12	1,080	1,932
Total		64,501	7,678	6,107	78,286

Sources of Data: McLaren, 1958:58-61; Loughrey, 1959:66-67; D.I.A. & N.D.; (E) Survey Estimates.

Notes: (a) Seals - weights based on 30% utilization of 80 lb. average for south coast, Baffin Island.

(b) Whales - based on 20% of average live weight 800 lbs., as recorded by D.I.A. & N.D.

(c) Char - average round weight of 3 lbs. less 15%.

(d) Geese - average 5 lbs. live, less 60%.

(e) Ducks - average $3\frac{1}{2}$ lbs. live, less 60%.

(f) Ptarmigan - average recovery $\frac{1}{4}$ lb.

(g) Caribou - an average of 146 lbs. per animal was established using unpublished data of the C.W.S. to arrive at live weight and the calculation for meat and fat content was taken from Foote (1967:148) Walrus - based on Foote (1967:142)

A recapitulation of the meat yields resulting from the 1966-67 harvest as depicted in Table 54 reveals the following data:

Cape Dorset Area - Per Capita meat yield, approximately 463 lbs.
- Contribution by species - Seals 63.7%; Caribou 10.9%
Char 4.2%; Birds .8%; Walrus 14%
Whales 6.3%

Lake Harbour Area- Per Capita meat yield, 551 pounds plus (data incomplete)
- Contribution by Species - Data incomplete

Species	Wastage
Birds	Negligible
Char	Negligible
Seals	Low
Caribou	Moderate
Walrus	Probably high
Whales	Probably high

Caching is still done chiefly along the trap lines and undoubtedly some of the caches are not used on the final circuit, allowing the meat to spoil through the following summer. The number of meat caches, however, is diminishing with the increasing use of the ski-doo and small numbers for the remaining dog teams are required.

The Department of Indian Affairs and Northern Development has constantly been concerned with more effective resource utilization and has mounted numerous projects designed to make better use of the fauna resources of the Arctic Regions. The most notable efforts have included canneries for whale, seal and fish meat; tanneries for sealskins, and others. The economics associated with such enterprises become rather formidable when

consideration is given to the rather vast areas involved; for instance, in the harvesting of whales and seals. Moreover, animal populations are really not so great as evidenced by the sustainable yield limitations prescribed for some of them. Assuming a suitable market, such an industry to remain viable, should have truly large quantities of animals available, otherwise costs rise out of all proportion to the value of the end product.

Only one project of the kind being discussed was initiated in the subject area and this concerned a test fishery for Arctic char. It is referred to again under "exploitation" which follows in this chapter.

In its capitulation of economic categories and effective utilization, the survey has inferred that certain improvements in utilization seem indicated with regard to some of the fauna species. Most of these will be dealt with by suggestions which are offered in the succeeding chapter, but a concept regarding utilization is discussed now which is considered to be of substantial importance to the purpose of this report.

If the basic tenets of the Ordinances, Acts and Regulations have to do, in part, with the protection of the rights of the Eskimo with regard to his harvesting fauna for food, and in some instances for monetary gain, then it might be reasonable to assume that, so long as these rights are undisturbed, alternative considerations as to the actual killing of a particular, or any, animal are possible.

Unless this is so, there is a real danger that the legal instruments referred to will, in effect, create an ethnic shooting preserve.

The implication is that non-resident non-Eskimos might be permitted to contribute very substantially to an expanded utilization in respect of certain of the larger species to the ultimate benefit of the Eskimo and the Government, fully within the framework of the laws as they apply to the limitations imposed on the numbers of animals that may be harvested within specified periods by the Eskimos.

The walrus is offered as a case in point. This animal, quite apart from its obvious potential in meat, provides the Eskimo hunter with ivory to a value of not more than $25.00, if the tusks are of good quality and length. The Eskimo carver can expect a recovery of from roughly $35 to $60 for each tusk carved or etched. The income presently derived from a walrus possessing usable tusks might, therefore, be expected to amount to approximately $60 to $125, in addition to whatever value may be placed on the meat.

If the non-resident non-Eskimo hunter is injected into the scene, nothing that has been said beforehand, regarding the derived benefit, has been altered. However, in addition to those, the Eskimo would receive wages for acting as a guide and rental income for his equipment; a new occupation, taxidermy, would be created for one or more Eskimos, and other monetary benefits would accrue to the community as a whole. What the non-Eskimo hunter has to show for all this is the head of the walrus with the two tusks carved or etched, but unremoved from the head of the animal.

The same reasoning might be applied to the hunting of caribou, with the introduction of whatever modification that might be required to bring it into the realm of acceptability.

An approach to utilization of this kind would undoubtedly help to smooth out the rather wide fluctuations in the value of harvests which occur from year to year and have such an undesirable effect on cash income. An example of what is meant by this is best provided by Table 55 which recounts what has happened to the price structure as it relates to certain of the fauna species for the period 1963-64, the peak year, through 1966-67. The prices shown are average for each year.

TABLE 55

Location & Year	Bearded Seal	Silver Jar	Common Jar	White Fox
CAPE DORSET				
1963/64	$24.25	$21.29	$16.84	$22.18
1964/65	20.60	12.12	10.22	8.78
1965/66	11.34	4.61	5.64	15.52
1966/67	13.73	6.77	6.80	13.75
LAKE HARBOUR				
1963/64	20.88	18.09	13.37	13.91
1964/65	14.73	11.49	10.17	9.74
1965/66	15.42	6.40	6.12	21.45
1966/67	16.67	7.40	7.40	16.70

Source: N.W.T. Fur Records.

During the last half of 1967, which would fall into year 1967/68, the price being paid for the ringed sealskins was averaging approximately $3.00

Exploitation

This aspect of renewable resources is geared essentially to the sustained yields which have been set for the several species in order to assure a continued and healthy population. It relates as well to the magnitude of harvesting that takes place or, perhaps, ought to take place within the framework of sustained yields.

For many of the species, little is known about populations, and sustained yields have not been fixed. For some, their numbers are so large and the rate of increase so great, that present harvesting is unlikely to disturb the balance. For at least two of the species, polar bear and walrus, populations have been postulated and sustained yields have been set pending further study*.

Considerable work has been undertaken with regard to the seal population and the degree of its exploitation in the subject area for the past six years is provided in Table 56. The balance of the most important species are treated individually in the succeeding paragraphs.

Walrus

There are approximately 120 general licence holders in the Cape Dorset area and, if all were to take the seven walrus as is possibly implied in the Regulations, then the harvest could conceivably amount to 840 walrus. The chances of this happening are extremely remote and immediate remedial action would follow harvests of this magnitude. However, the Eskimos of the Cape Dorset area have been exploiting this animal to the extent of 25 annually on an average, and most, if not all, of these have been harvested close to Cape Dorset. Nottingham Island which might be considered part of the subject area has not been hunted for some years.

It seems realistic, therefore, that a slightly increased exploitation of the animal would not be unreasonable should an improved utilization require a potential harvest of from 50 to 70 animals.

TABLE 56

EXPLOITATION OF SEALS

Year & Location	Total Kill Bearded	Total Kill Ringed	Sustained Yield Bearded	Sustained Yield Ringed	Exploitation Over (+) Under (-) Per cent	
CAPE DORSET						
1961-62	68	834			-87	-84
1962-63	208	2514			-60	-53
1963-64	400	4112			-23	-24
1964-65	519	5131	520	5400	0	-05
1965-66	308	5118			-41	-05
1966-67	313	5656			-40	+05
LAKE HARBOUR						
1961-62	94	1131			-64	-55
1962-63	200	2426			-23	-03
1963-64	368	2676	260	2500	+41	+07
1964-65	351	3600			+35	+44
1965-66	224	2964			-14	+18
1966-67	156	2736			-40	+09

* Work on these and other species is carried out on a continuing basis by the Fisheries Research Board and the Canadian Wildlife Service and the influence of new data will be reflected by changes in the permissible harvesting levels.

NOTE: The sustained yield values were taken from McLaren (1958:28-29; localities 9 to 12), less an allowance for the sector Schooner Harbour/Cape Dorchester. These apply to the ringed seal. The basis for bearded seal sustained yield was also taken from McLaren (1958:54), South Coast Baffin Island, and an arbitrary split was made for the two settlements roughly proportionate to the yield figures for ringed seal. Following the receipt of new information concerning the bearded seals, McLaren's yield calculation was doubled.

A communication from Dr. A.W. Mansfield, Fisheries Research Board, March 1968, places exploitation in perspective for the present. The communication states the last two years of ringed seal harvest for Lake Harbour is indicative of slight over-exploitation and that new data currently in the process of analysis for Broughton Island will permit better estimates of seal populations in southern Baffin Island.

On the matter of bearded seals, the communication points out that the results of the work of J.J. Burns, 1967, "The Pacific Bearded Seal", in Alaska, the bearded seal is now known to produce a pup each year after maturity, rather than just one every two years suggesting that McLaren's sustainable yield figures should be increased (the survey arbitrarily doubled these to appear as they do in the table).

The final statement suggests that, if the bearded seal is over-exploited to the extent that it was in 1963 through 1965, restrictions on the harvest would have to be considered for the Lake Harbour area.

This throws considerable light on the matter of exploitation where seals are concerned and demonstrates rather well that emphasis must be placed upon improved utilization rather than expanded harvesting.

Caribou

It is probable that this animal could stand a slightly increased exploitation should the need arise. The indications seem to point to an increasing population. The year 1966-67 recorded one of the largest harvests for some years and the animal was generally plentiful. Some caution is necessary, basing such conclusions solely on takes, because there is a coincidence between trapping and the hunting of caribou which tends to give the impression that caribou is alternately scarce and abundant when, in fact, the situation may be one of steady increase in its population. Attention is drawn to a comparison between Tables 51 and 52 which would appear to suggest that the caribou harvest is lowest when the fox cycle is in its peak years, and visa versa, indicating the Eskimo's exercise of preference. The best indicator lies with the prevalence of wolves, of which forty or more sightings were made by Cape Dorset Eskimos in 1966-67.

Arctic Foxes

There seems no doubt whatever that this animal is substantially under-exploited in view of its wide distribution in the area. There is, however, good evidence of over-exploitation in the Lake Harbour area by reason of a preponderance of trap lines in an acutely contracted area. Cape Dorset Eskimos demonstrate a more systematic approach resulting in a good distribution of trapping zones, but there is good potential for the establishment of

many more.

The lemming with which fox populations are equated will forage in most localities affording reasonable grass, and other small vegetal growth, free from flooding. A decrease in its population occurs when its range becomes exhausted which, in northern latitudes, requires about three years for effective regeneration.

Arctic Char

This fish is undoubtedly under-exploited as a local source of food, but there would not appear to be any potential for viable commercial exploitation beyond the settlement level due to the absence of large fresh-water systems in the southern part of the survey area.

Reference was made to a test fishery on Nettilling Lake for the purpose of determining the feasibility of commercial fishing and product preparation for the southern market. The project was initiated in 1963 and was suspended in 1966. Mr. H.M. Budgell, a Projects Officer with the Department of Indian Affairs and Northern Development, was in charge of the undertaking and was good enough to contribute an account of the project. It is included in its entirety as Appendix N.

The only other species which may be considered resident in the area is the polar bear and its exploitation is comparatively closely controlled. The birds, with the exception of the ptarmigan, are migratory, and exploitable within narrow limits. The whales appear to be fully exploited when they make an appearance. Their movements along the area coast are unpredictable.

Suggestions concerning some aspects of exploitation are contained in the succeeding chapter and will allude to those species with which it is thought that some improvement may be introduced in the harvesting levels and exploitation.

NON-RENEWABLE RESOURCES

At the present time the only resource in this category being exploited by the local Eskimos is serpentine and serpentinized dunite, referred to generally as soapstone.

The mineral, which is very abundant, is mined by the Eskimos from numerous occurrences along the south coast and provides the principal raw material for carvings. For the most part, mining is accomplished by the shallow quarry method. The Eskimos at Lake Harbour have diverged from this method of mining and a description of their operations is included under Economic Geology.

Cape Dorset comes closest to the understanding of good exploitation of soapstone in relation to utilization and is, if not the best, certainly one of the best organized and equipped communities in the Arctic in this respect. Moreover, its approach to exploitation is highly selective and

is carried out over a considerable area*. A listing of the equipment used is contained in Appendix P.

The area about Lake Harbour contains many occurrences of the mineral but the Eskimos lack equipment and, most of all, competent direction of the kind available at Cape Dorset.

Other settlements in the eastern Arctic suffer from either a chronic or occasional shortage of this raw material; in this context it may be said that soapstone is under-exploited as a mineral having export potential on a regional basis.

Other minerals which are amenable to local, small mining operations are known to occur in the vicinity of Lake Harbour. The most notable ones are mica and lazurite. These lend themselves to exploitation with an almost negligible investment in capital, and a relatively high requirement for local labour and transportation equipment.

These minerals are mentioned later in a recommendation appearing in the succeeding chapter. The area has potential for the development of the metallic minerals but these are somewhat beyond the scope of this report and are not of immediate concern to the indigenous people.

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* B.W. Lewis in the Canadian Geographical Journal, Vol. LXXV, July, 1967, describes a normal soapstone mining expedition carried out by the W.B.E.C. The expedition ranged as far as camp 17 shown on Map 6 of the report.

CHAPTER 8

GENERAL CONSIDERATIONS

Some assertions were made in the introduction to the report that are closely related to certain fundamental factors underlying or at least influencing policies or courses of action affecting the Arctic Archipelago and, therefore, the subject area.

The first of these factors concerns the disposition of the Eskimo population and the apparent need to keep it intact, living where it does, in the manner that it does. In these respects, western society deemed the molding of the Eskimo in its own social image desirable in the first place, may now be experiencing hesitancy about a more uniform and accelerated progression in the whole sphere of Eskimo acculturation. This gives rise to the thesis that it should be possible to accomplish much in the latter sphere in settled southerly locations with Eskimo groups of manageable size.

A second factor of undetermined influence evolves from the standpoint of sovereignty in relation to the size and make-up of the population it may be desirable to have in the Archipelago*. It is obviously desirable to have a population in occupation in the Archipelago, but sovereignty itself is unlikely to become precarious as a result of encouraging a closer balance between the Eskimo population and economic growth in the area.

A third factor relates to the natural resources of the Archipelago. Future development in the region is undoubtedly dependent upon the mineral potential, the extent of which is presently largely unknown. Some urgency seems to manifest itself with regard to these potential resources which might be more meaningful and rewarding if they were to be manifested at a later time when world markets, prices and technology become more amenable to the attraction of large amounts of private investment capital. The very considerable undeveloped potential of the territorial mainland with its extendable communication systems rather than the remote Archipelago would seem to have a more solid claim to the money, time and energy resources presently available for development purposes.

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* Canada assumed sovereignty over the Arctic Islands following their transfer from Great Britain in 1870 and 1880. Two minor contests over Canada's sovereignty over certain of the islands developed afterwards but sovereignty was maintained in spite of the absence of a significant occupying population. Gordon W. Smith in "The Arctic Frontier" (1966:211) states "if at any time subsequent to 1933 Canada's title to the Archipelago had been formally challenged in law, the precedent of the East Greenland Case would in all probability have been sufficient to decide the case in her favour. The Greenland case, decided in 1933 by the Permanent Court of International Justice recognized Denmark's title to all Greenland, even though it is more than nine-tenths uninhabited".

These factors of indigenous population, sovereignty and resources are inextricably bound up with the area and the opinions expressed by the survey regarding them, are not apt to be found agreeable to everybody. The survey could find no overwhelming evidence to suggest that spectacular economic changes are about to occur in the area. The Eskimo economy is likely to continue for some time to function within narrow limits requiring increased Government help and made more difficult by the increasing Eskimo population. The natural resources are unlikely to provide an early solution for the substantial improvement of these micro-economies, but every avenue offering some possibility of betterment should be fully investigated.

CONCLUSIONS

Four conclusions are drawn by the survey from the data presented in this report. Additional support for them is derived from a very voluminous correspondence and reporting of events which constitute part of the Departmental system and cannot be published. These, however, have been examined as objectively as possible in order to arrive at a broad and useful appreciation of an often difficult situation.

The first conclusion to be drawn is the principal and over-riding one. It does not include a recommendation per se but a line of investigation is implicit and should be given early consideration.

1. A consolidation seems warranted in those settlements whose economies appear viable, have good growth potential, and wherein achievement has been brought about largely in the absence of a preponderant white establishment. In a situation of this kind the populations of communities with little or no growth might usefully be merged with the former, assuming that the populations concerned are compatible. Once consolidation in the growth community could be effected, optimum population levels would have to be predicted on the estimated economic growth and the capacity of the economy to sustain them at a desirable level. As well, a plan would need to be formulated to accommodate the excess population in centres other than in the Archipelago where employment,

education and acculturation generally could progress on a sound and accelerated basis.

The subject area possesses two settlements which, from all indications, qualify in the growth categories alluded to in the conclusion. Cape Dorset demonstrates rather well the idea of a good growth-community by Arctic standards, and Lake Harbour unfortunately demonstrates just the reverse. Some supporting argument for this contention is presented in the succeeding paragraphs.

Population:

At least one important indicator of economic growth is the capacity of a community to sustain the natural increase in its population. If, in addition to that accomplishment, it is able to sustain an immigration then it must indeed be a thriving community. A comparison of population activity for the period from 1961 through 1966 shows this.

Cape Dorset:

Average annual rate of natural increase*	42.3 per 1,000
Lowest rate in any year	30 per 1,000
Highest rate in any year	57 per 1,000
Natural increase	91 persons
Immigration	53 persons
Net population growth	144 persons

Lake Harbour:

Average annual rate of natural increase	42.5 per 1,000
Lowest rate in any year	14 per 1,000
Highest rate in any year	63 per 1,000
Natural increase	29 persons
Emigration	23 persons
Net population growth	6 persons

*The natural growth rate of the population for the country as a whole for the present decade to the end of 1966 was 12.1 per thousand according to the Economic Council of Canada, Fourth Annual Review. (1967:48)

The Economy - Lake Harbour occupies an inferior position in almost every area in which comparisons are resorted to. Most disadvantages can be equated with the site, but it is only fair to mention that the D.I.A. & N.D. has paid little attention to Lake Harbour and its development, whereas its financial assistance to Cape Dorset for this purpose has been relatively substantial. It is as if a situation of little potential were recognized long ago. If this is so then there is even less of a reason today to commend the community as one to be built up and developed.

Cape Dorset -	Annual average rate of economic growth	47% (1963-67)
	Lowest growth-year increase (1964-65)	7%
	Highest growth-year increase (1966-67)	77%
	Growth in 1966-67, less construction	57% (approx.)
	Growth in 1966-67, less welfare	48% (approx.)

The growth in the underlying economic base was 48%

Lake Harbour-	Annual average rate of economic growth	8% (1963-67)
	Lowest growth-year decrease (1965-66)	(20%)
	Highest growth-year increase (1966-67)	52%
	Growth in 1966-67, less construction	28% (approx.)
	Growth in 1966-67, less welfare	16% (approx.)

The growth in the underlying economic base was 16%

Site Considerations - The Lake Harbour site and its environs are such as to seriously inhibit physical growth much beyond the present installation and what is planned for the coming five years. There is no location within an acceptable distance of the settlement that lends itself to the development of an air-strip. The present source of potable water is not amenable to impounding and isolation from contamination. Furthermore, alternative sources would be costly to develop.

The Cape Dorset site with some surface levelling is capable of accommodating a population nearly twice its present size. A location for an air-strip has heen surveyed within a few hundred yards of the settlement. The source of potable water, although not ideal in all respects, is amenable to further impounding and is relatively free from contamination.

The Fauna Resources - The Lake Harbour Eskimos who do most of their seal harvesting in the North Bay area, and somewhat beyond Big Island, are rapidly approaching maximum exploitation of this resource. The local topography is exceptionally rugged and militates against a more widespread distribution of trap-lines. This may not be the only factor that contributes to the contracted trapping area but it is an important one and results in over-exploitation and a diminishing return for additional effort.

The Cape Dorset area is achieving what appears to be good exploitation but at least two coastal sectors are relatively unharvested for seals. These are the central belt extending from Chorbak Inlet to Markham Bay, and that part of the Foxe Peninsula bordering on the Foxe Strait. Both sectors are more easily accessible from Cape Dorset. The scope for developing additional trapping zones is quite favourable and could be greatly extended by an organized effort at fuel caching and the improvement of communications for the trappers.

Summary - the D.I.A. & N.D. alone is contemplating new investment in Lake Harbour amounting to nearly $500,000 by 1973. This amount almost unavoidably will have to be supplemented by additional sums for road building and improvement, water impounding and purification facilities, an administrative office, vehicular equipment, community freezer, etc. As well, some additional new investment might reasonably be expected to derive from the D.N.H.W. and the R.C.M.P. Area operating costs, which have not been dealt with separately in this report, can be expected to rise markedly partially as a result of maintaining two settlements where one might conceivably do.

With an appraisal of harvesting areas and patterns; an investigation into site capability; a reappraisal by the W.B.E.C. of its proper role in the community, and solid D.I.A. & N.D. support for workable new projects, it should be possible to usefully accommodate up to 800 persons at Cape Dorset. The D.I.A. & N.D. might be able in this way to effect substantial savings over the present two settlement arrangement and may, hopefully, be able to make some of these savings available for income generating plant and equipment rather than for more sophisticated social construction.

2. The fauna resources must be viewed in harshly realistic terms whenever the question of their commercial potential arises. In the subject area at least, fauna are not abundant in the context of relatively large-scale commercial exploitation. Their distribution pattern is one of wide dispersal. In the case of ringed seals, for example, assuming a ten-mile wide strip of fast ice over a coastal belt 450 miles in length, the density is approximately 1.7 per square mile, based on the sustained yield. The density of the remaining species is even less attractive. Sophisticated commercial projects aimed at the recovery of consumable animal by-products for export might better be avoided and commercial exploitation, as such, limited to the harvesting of species for their skins and furs by the Eskimos as is the present practice. There is, however, ample room for improving the efficiency of harvesting. There is also room for bringing about a more effective utilization of the resources through sports hunting, without upsetting pre-established balances of any kind.

A redispersal of settlement populations to permanent camps, and a subsidy on seals, have often been suggested as ways to improve exploitation of the fauna resources and to regain for the Eskimo some of the old self-reliance and security he is reputed to have lost in the process of his transition. The survey is not in agreement with either of these theses. The data suggest that exploitation has in many ways improved with the abandonment of camps and may, in fact be approaching a state of near over-exploitation. There is no doubt that the Eskimo has improved his security, self-reliance and confidence in himself by moving to the settlement. None of this, however, has taken place without a certain amount of frustration which becomes more manifest in some Eskimos than others. Some families undoubtedly will shift back to the camp, but it could well be that these will be the weaker ones in some respect and are unlikely to remain there long. The fauna resources simply are no longer sufficient to provide the total wants of today's Eskimo family, and the costs of patterning every camp along the lines of a settlement would prove prohibitive.

3. The development of the mineral potential along contemporary lines and meaningful scales would appear to be some years away. The current plan of the Geological Survey of mapping the basic geological and geophysical data would seem to be the correct one. This should lead logically to a mineral inventory on which a reasonable future development plan can be based. What all of this will mean to an indigenous people is too remote to postulate, but it is reasonably certain that, unless the Eskimo is moved more quickly through the educational processes of his transition, he stands to gain very little from the events which are apt to develop around him.

   Apart from these considerations, there is much to be said for an early approach to the development of certain mineral potential which makes itself known in the area. Some of the minerals recognized in the area would lend themselves rather well to small enterprises because they involve products of relatively high value requiring a minimum investment for their development. In addition, little real skill is required for their extraction and preparation. This aspect of mineral potential requires increasing attention with regard to the assessment of known occurrences and the discovery of new ones.

4. The principal conclusion of this report outlines a need for consolidation on an area basis in order to bring about a desired efficiency in the operation of population centres, and to create a unit which offers better growth potential for the local economy. It does not, however, end there.

The private institutions in Cape Dorset have, themselves, allowed a situation to develop that permits two nearly identical merchant organizations to be established in a community that is properly able to sustain only one. This condition operates ultimately to the detriment of the Eskimos and non-Eskimos alike, but perpaps the greatest disadvantage that can be accredited to one of the merchants, the co-operative store, is that it operates to

the detriment of its related Producer Division, as well, by its demand upon time, energy and money that could be better utilized.

The Hudson's Bay Co. at times presents itself as an enigma in its manner of operation. For example, at Lake Harbour the company has maintained its operation through a period of some years when it cannot possibly have shown a profit and may have operated a part of the time at below cost. As well, at Cape Dorset it was at least partially responsible for creating its own competitor.

In the view of the survey, steps should be taken by the Directors of the W.B.E.C. and the Hudson's Bay Co., to review this situation realistically with the objective of achieving greater concentration on the part of the Eskimos in their rather excellent Producer Division and greater concentration on the part of the Hudson's Bay Co. in providing more employment opportunity, an improved retail facility with more space and an inventory improved in all respects - and the recognition that it is now entirely dependent on the Eskimo dollar and must act accordingly.

RECOMMENDATIONS

The recommendations that appear in this report are necessarily almost devoid of detail. Some of them will have been submitted in detail in Departmental memoranda. The primary purpose of the recommendations appearing in this report lies not in their detail but rather in their effectiveness in emphasizing specific situations that show promise of economic potential. The principal recommendations might easily require many months of separate study before their cost/benefit aspects are proved or disproved.

A two-division presentation of the recommendations, regional and local, is used to separate those that envision a project located outside the subject area and, because of this being of only indirect benefit to the populace; and those located inside the subject area and, therefore, of direct benefit.

REGIONAL RECOMMENDATIONS

1. Boat Building - Frobisher Bay

   The feasibility of establishing a small boat-building industry to supply a part of the eastern Arctic needs to be examined. The object is to produce a cedar-strip, canvas-covered freighter canoe to a standard design and construction. Preference should be given to a scheme that encourages the co-operation of the manufacturer(s) presently supplying canoes to the area, and also the Hudson's Bay Co. which markets them to the Eskimos.

2. The Assembly of Motor-Toboggans & Outboard Motors - Frobisher Bay

A study should be undertaken with a view to establishing a small assembly plant for vehicles and other machines such as those named above. The object would be to undertake the assembly and finishing of the most popular manufactures and models and to attempt to develop work-horse models and standardization. Such models would be free from all the chrome and superfluous gadgetry so necessary to the southern market and so costly, inefficient and otherwise bothersome in the north. Parts interchangeably in these two categories of secondary transport would simplify inventories and make possible a significant reclamation of otherwise useless equipment.

The co-operation of the manufacturers most concerned in respect of their sales in the area, would be essential to the success of a project of this kind. The Eskimo Loan Fund, through which much of this equipment is purchased, might in some way be brought to favour equipment that has an element of Eskimo labour in its fabrication.

LOCAL RECOMMENDATIONS

1. Tourist Installation - Cape Dorset

The prospects for a viable tourist industry at Cape Dorset are as good as, or perhaps better than at most places in the Islands*. The settlement and its immediate area possess two resources on which the industry could base itself; i.e., a widely known reputation in Eskimo art, and a relative abundance of fauna species which, hopefully, can be construed to mean "game" where non-resident and alien sports hunters are concerned. Reference has been made under "utilization" in Chapter 7 to a framework within which it should be possible to create a better climate for the sports hunting of certain species. Without this broadening of the Regulations under the Ordinance and Acts there is virtually no possibility of establishing a viable service industry such as tourism at Cape Dorset, or for that matter elsewhere in the area.

A feasibility study should be initiated to consider a tourist installation erected on the fringe of the settlement with a minimum investment of perhaps $80,000 for accommodation and services such as electricity and water, etc. The accommodation should consist of a combination of plan 439 and 442 Eskimo houses, as presently approved by CMHC, connected so as to produce an integral unit erected on a single pad. No combination should consist of less than one plan 442 and two plan 439 units.

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* A service industry of this kind was operating in the vicinity of Cape Dorset intermittently between 1959 and 1963. It was not a success due chiefly to the generally poor facilities, uncertain air connections and, in the opinion of the survey, inadequate provision for the taking of fauna by non-resident hunters.

The clientele should be routed via Montreal/Frobisher Bay to take advantage of high frequency air routes. For this reason the prime market area for tourists would appear to be located in the States of New York, New England, Pennsylvania and Virginia. Nothing short of a professionally operated installation would suffice.

The length of the tourist season and the amount of repeat business that might be looked for would largely depend upon the degree of leniency that would accompany changes in the regulations pertaining to fauna.

2. Offset & Silk Printing - Cape Dorset

Ways and means should be explored with a view to encouraging offset and silk printing on a production basis by the Producer Division of the W.B.E.C. This organization possesses experience and has shown substantial creativity in design work, the preparation of stone cuts and graphic prints and silk printing. The technique is related to that of offset printing which, perhaps, suggests another future development offering good growth potential. Each year the W.B.E.C. has cards, calendars and printed fabrics run off by firms in the south, based on designs prepared by its members. These products are not competitive in the strict sense and could be equally well printed in the settlement to the not inconsiderable benefit of the Eskimos and the community as a whole.

For its part, the Directorate of the W.B.E.C. should re-examine the real position of the W.B.E.C. in the community along the lines of those sentiments expressed in conclusion 4 of this chapter and determine if its present two division structure is the best to maintain in the long run with the limited financial resources available. The D.I.A. & N.D., for its part, could consider the measure of tangible assistance it could possibly lend to encourage a perhaps more streamlined co-operative establishment.

In a working atmosphere of this kind it should be feasible to provide either individually or jointly:

A) A building measuring approximately 100' x 38' from the surplus "butler" structures at Frobisher Bay. A lease or rental/purchase agreement between the parties could be concluded before dismantling the building and erecting it again at Cape Dorset. The building would be ideal for fabric printing and for housing the offset printing unit.

B) An offset press, ancillary equipment and initial shop supplies, with the exception of printing papers, could be provided new at a cost of approximately $10,000*. This would permit the W.B.E.C. to produce calendars, cards and catalogues comparable to those it has had done in the south in recent years. Such a printing

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* The cost estimate for equipment was arrived at through the co-operation of J.A. Grenier, Printing Co-ordinator, Information Services, D.I.A. & N.D.

unit suggests considerable scope for Eskimo publications of all kinds, including educational literature frequently required by the Education Division.

C) Technical assistance in the layout of machinery and the training of an operating staff for a period of from four to six months. It is felt that training in Cape Dorset would be more effective and less costly than the alternative course of sending a contingent to the south for training purposes.

For the year ending October 1967, an amount of nearly $50,000* was involved in the production and sale of printed fabrics, calendars and cards. This sum does not represent the full amount of the transactions involved but has been purposely isolated as the amount of money within which the W.B.E.C. could exercise some flexibility in undertaking to carry out the printing operations at Cape Dorset rather than leaving them to commercial firms in the south.

The sum of $50,000 is composed of the profit element realized by the W.B.E.C. through the sale of printed products in the south, plus the printers' charges made up of labour, overhead and profit. The cost of materials is not reflected in the aforementioned sum.

3. The Exportation of Soapstone - Cape Dorset

An opportunity presents itself for the West Baffin Eskimo Co-operative to gain additional revenue through the exportation of soapstone to settlements that experience a chronic shortage of it. The W.B.E.C. is well able to cope with this kind of request if such are timely and properly documented.

The D.I.A. & N.D., which is familiar with the requirements of all settlements in this regard, should give consideration to the promotion of inter-settlement trade rather than resort to imports of soapstone from the south. Orders placed on the Cape Dorset facility would accomplish a better utilization of equipment and expand the man-hours that can be devoted to mining.

4. Equipment Repair, Overhaul & Rebuilding - Cape Dorset

There is an overpowering need for the establishment of a small business to offer a service of the type indicated above. At least one Eskimo youth has been trained by Outboard Marine of Peterborough in outboard motor overhaul, and a number of others have had mechanical training of some sort. One or more should be encouraged to apply for a loan

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* Officers of the Queen's Printer provided the cost estimate of materials which made it possible to isolate the remaining elements of the printers' charges. The cost of card material was estimated by the survey and C.A.P. provided the cost of unprinted fabric.

under the Eskimo Loan Fund for the purpose of establishing an enterprise of this kind because growth potential would appear to be good.

A good tool inventory could be got for about $3,000 and would necessarily include an electric welding and cutting apparatus, and gas-welding equipment. A small initial parts inventory, although difficult to estimate in view of the multiplicity of models, might be placed at $1,500 to begin with. Business transactions could be handled initially by the W.B.E.C. until such time as the entrepreneur familiarized himself with business methodology.

5. Pottery Making - Cape Dorset

Appendix O of this report lists a quantity of practically new pottery-making equipment presently in the possession of the W.B.E.C. One Eskimo girl resident in the settlement has gained an international reputation for her pottery work and a second Eskimo youth has received vocational training in this art. The Snowgoose, a retail outlet for native arts and crafts in Ottawa has stated that a good market for Eskimo pottery exists provided a compromise between originality and utility can be arrived at by the potter in order to permit sales of attractive products at a reasonable price. This shop has indicated its willingness to advise the Eskimos on all aspects of its market and would be willing to place a quantity of pottery on display.

The Eskimo girl and the second Eskimo should be encouraged to apply for a loan to purchase the pottery equipment from the W.B.E.C., or alternatively, come to some arrangement with that organization for the use of it on a rental basis for the purpose of exercising their talents in this field. The D.I.A. & N.D. has financed their expensive vocational training and the provision of facilities for the development of their talent is needed.

6. Assessment of Mineral Potential - Lake Harbour

It would be worthwhile to mount a small pilot project to determine the practicability of establishing a small mining operation for the extraction and exportation of mica (muscovite) which is known to occur in the vicinity. Old occurrences should be stripped down and initial samples obtained for laboratory analyses. The results of these tests would determine what steps are required to place this enterprise on a good footing.

Note: This recommendation is not necessarily inconsistent with the principal conclusion drawn from this study, and which attempts to formulate a case for the abandonment of Lake Harbour. The occurrence of mica might be considered wide-spread along the south coast of Baffin Island and exposure to the problems associated with its location, assessment and extraction would be desirable in any case.

As well, if the grade of mica at Lake Harbour is good, it would not be impracticable to mine it and transport it using Cape Dorset or Frobisher Bay as a base. Soapstone is presently being obtained in this way.

SUGGESTIONS

In this section the survey presents a number of suggestions which it feels may in some way improve certain situations that exist in the area. To the observer with much exposure to the facts of life in the Arctic many of these may seem unworkable, or otherwise undesirable, but if only one or two are deemed useful then their submission will have been worthwhile.

1) Up-to-date statistical information in the areas of population, income, harvesting, consumption of essential services, etc., are of such vital interest to the D.I.A. & N.D. that some measure needs to be taken to accumulate them annually and as accurately as possible. Area Survey Reports would have a much longer useful life if they could be augmented by these data at intervals of one year.

   Suggestion - Area Administrators would appear to be in the best position to gather raw data of the kind mentioned above and could do so with the co-operation of whatever private institutions that are established in an area. The accumulated data could be forwarded to the Industrial Division, D.I.A. & N.D., for preparation into annual supplements to the basic reports. The suggestion is not necessarily feasible in all locations but would be eminently possible in the south coast region of Baffin Island.

2) Postal Services - The problems associated with the delivery of mail in the north are generally appreciated by all. There is, however, a justifiable lack of sympathy with the Postal Authority in those settlements where improvement is possible through a better utilization of the existing. By the "quickest possible means" would be a fair guide for improvement if this could be achieved without greatly increasing the cost.

   Suggestion - Re-examine the practicability of routing the mail from the south to Moosonee by rail thence via air carrier to Cape Dorset on a once-monthly basis, as opposed to using the significantly higher frequency routing Montreal/Frobisher Bay (Lake Harbour) Cape Dorset.

3) Potable Water - It is paradoxical that there is very often a shortage of clean water in a land that possesses it in abundance. Water appears rarely to have been a factor in the selection of settlement sites in the Arctic and for this reason it will nearly always be found at the top of the list of problems.

Suggestion - Examine the practicability of constructing two, small earth-fill dams at the present Cape Dorset potable water source with a view to increasing the depth of water by at least six feet.

4) Sewage - The problems associated with effluent disposal in the settlements are generally difficult to solve. Sophisticated disposal systems cannot be justified for most of the settlements due to their extremely high cost. Improvement must, therefore, be looked for in mofified collection and dumping systems.

Suggestion - Ensure that an adequate supply of plastic containers is available in the settlements at all times so that the present open collection practice at Cape Dorset is eliminated. Consider for the difficult summer months a small steel barge, modified with a centre well and a lever-operated hinged bottom-trap, which could be loaded with effluent containers at low-tide and later propelled or towed away from the settlement and dumped with all containers being punctured.

5) Education - Like most other undertakings in the Arctic, education is expensive. For the Eskimo nothing is of greater importance than the process of education. In spite of these truths progress is interfered with by parents arbitrarily removing their children from schools before the term is completed. This occurs especially throughout the month of June due to the setting up of summer camps.

Another facet of education, vocational training, might be usefully improved by a more determined selection of candidates, a careful equating of enrollment with employment opportunity both within and without a settlement, and a greater concern for the student following graduation.

Suggestions - Examine the validity of the practice of allowing children to be removed from schools at the whim of the parents and exercise the normal compulsory measures in cases where gross irresponsibility is manifest.

A two or three-man travelling review board needs to be set up by the Education Division to interview applicants for vocational training in the settlements in conjunction with deliberating on the recommendations that usually accompany each application. Assuming that employment opportunity is available to a candidate either within or without the settlement following graduation, he or she should be expected to make an undertaking beforehand that every reasonable effort will be made to exploit such employment opportunity following graduation. A detailed case history of each student for a reasonable period following graduation would be very useful for future guidance. Tangible support should be given to the type of vocational training visualized in local recommendation number 2 of this report.

6) Mineral Claims - The need to stake certain of the soapstone occurrences along the south coast is almost bound to arise in the near future. Claims staked by the individual Eskimos are likely to be transferred to his co-operative, or a similar organization of which he is a member. In order to maintain mining claims in good standing, Schedule "B" of the Canada Mining Regulations requires 4 cu. yds. of material to be removed, or the posting of a bond in the amount of $100. Elsewhere in this report it is made clear that the mining of soapstone involves the removal of relatively small amounts of material from numerous widely separated deposits, each of which would normally require a claim to be staked. The regulation does not appear to take this aspect of soapstone mining by the Eskimos into account.

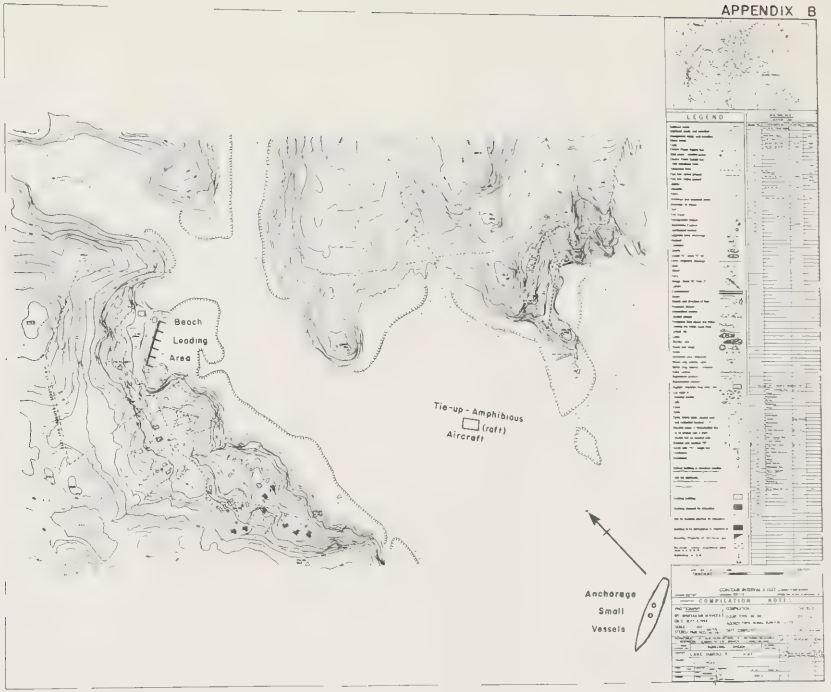
   Suggestion - Review Schedule "B" of the Canada Mining Regulations with the object of reducing the work requirements in respect of each claim to 1 cu. yd. or a bond of $25, such claims to be valid only for the mining of soapstone to be used by the Eskimo for carving, or for sale by him to other Eskimos likewise engaged. All other articles of the Regulations pertaining to forfeiture would apply as presently stated by the Regulations.

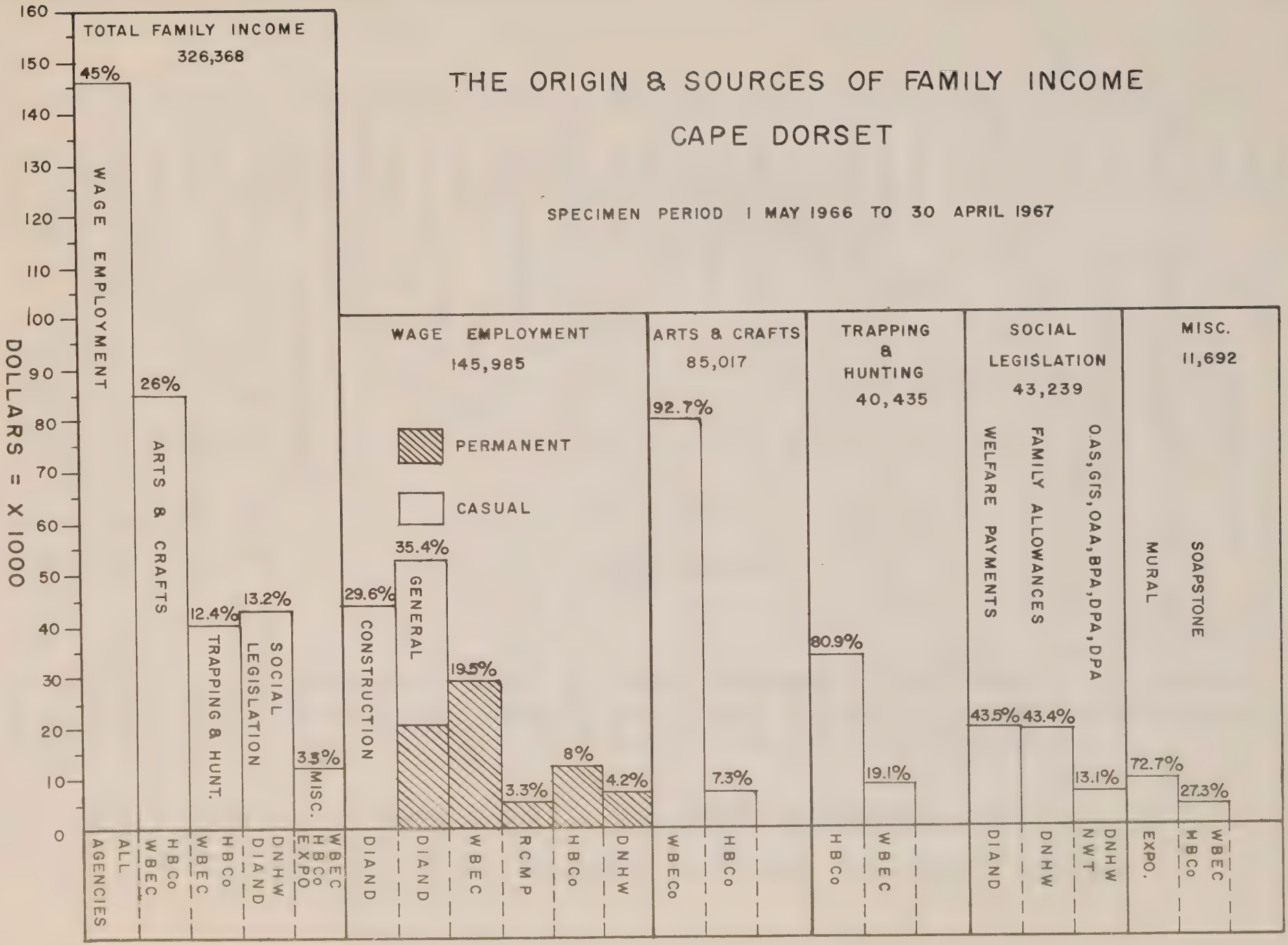
7) Trapping - In Chapter 7, this aspect of harvesting was discussed at some length, and it has been mentioned elsewhere in that Chapter that there is much scope for the expansion of trapping in good years. Mutual reliance and logistics are important in trapping and any expansion of it might be contemplated.

   Suggestion - Consideration should be given to establishing fuel caches in the present trapping zones to cut down on the logistical problems associated with current trapping methods. Eskimos should be encouraged to consider the purchase of radio equipment of limited range for communication within a trapping zone. Presumably the D.O.T. could advise on the output requirements and frequencies, as well as give the necessary authorization, much as it does for taxicab and construction companies, for example. These approaches should provide at least some additional incentive for expanded trapping.


Landing Site of Twin Otter
Proposed Landing Strip
Beach Loading Area
Tie-up Amphibious (raft) Aircraft
Ice Landing Strip
Anchorage – Small Vessels

APPENDIX B


Beach
Leading
Area
Tie-up - Amphibious
(raft)
Aircraft
Anchorage
Small
Vessels
LEGEND


THE ORIGIN & SOURCES OF FAMILY INCOME
CAPE DORSET
SPECIMEN PERIOD 1 MAY 1966 TO 30 APRIL 1967
DOLLARS = X 1000
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
TOTAL FAMILY INCOME
326,368
45%
WAGE EMPLOYMENT
26%
ARTS & CRAFTS
12.4%
TRAPPING & HUNT.
13.2%
SOCIAL LEGISLATION
3.5%
MISC.
ALL AGENCIES
WBEC
HBCo
WBEC
HBCo
DNHW
HBCo EXPO
WBEC
WAGE EMPLOYMENT
145,985
PERMANENT
CASUAL
29.6%
CONSTRUCTION
DIAND
35.4%
GENERAL
DIAND
19.5%
WBEC
3.3%
RCMP
8%
HBCo
4.2%
DNHW
ARTS & CRAFTS
85,017
92.7%
WBECo
7.3%
HBCo
TRAPPING & HUNTING
40,435
80.9%
HBCo
19.1%
WBEC
SOCIAL LEGISLATION
43,239
43.5%
WELFARE PAYMENTS
DIAND
43.4%
FAMILY ALLOWANCES
DNHW
13.1%
O.AS, GIS, OAA, BPA, DPA, DPA
DNHW NWT
MISC.
11,692
72.7%
MURAL
EXPO.
27.3%
SOAPSTONE
WBEC HBCo

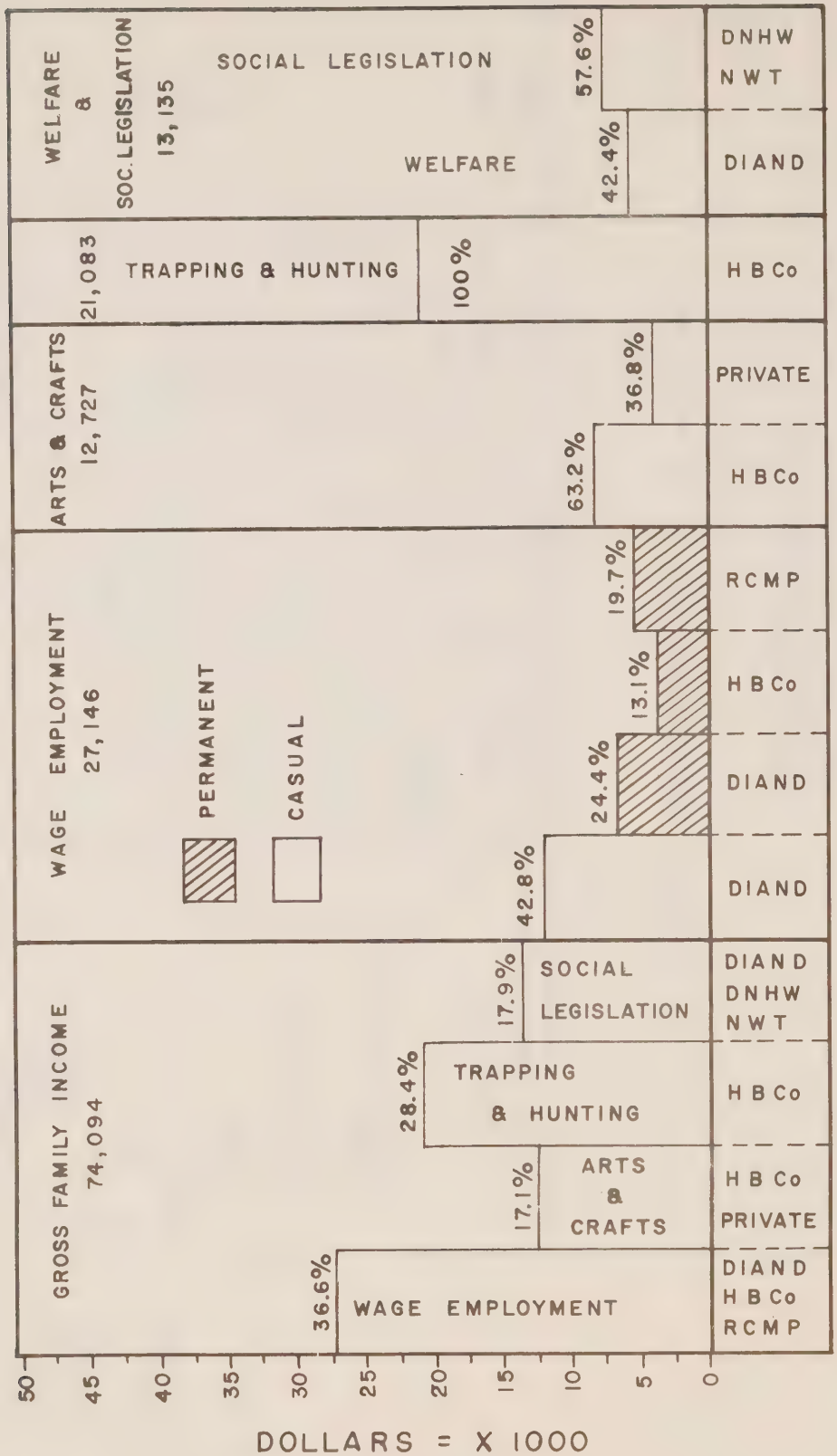
APPENDIX C

APPENDIX D

THE ORIGIN & SOURCES OF FAMILY INCOME

LAKE HARBOUR

SPECIMEN PERIOD 1 MAY 1966 TO 30 APRIL 1967



APPENDIX E

NAME, LOCATION AND DISPOSITION OF PERMANENT CAMPS

Reference to Map No.		Location							
Ref. No.	Name	Latitude			Longitude			Status	
1	Nuvudjuak	65	24'	30"	77	23'	00"	Abandoned	1959
2	Nuwatta	65	08'	00"	77	37'	00"	Abandoned	1952
3	Enukso	64	34'	30"	78	10'	00"	Abandoned	?
4	Unknown	64	23'	30"	77	53'	00"	Abandoned	1953
5	Unknown	64	24'	00"	77	41'	30"	Abandoned	1959
6	Tikkeerak	64	13'	00"	76	48'	00"	Abandoned	1966
7	Tusseeakjuak	64	13'	30"	76	45'	00"	Abandoned	1960
8	Keeaktook	65	15'	30"	76	28'	00"	Abandoned	1962
9	Shartooweetook	64	21'	00"	76	12'	00"	Occupied	
10	Eeteedleeakjuk	64	20'	00"	75	41'	30"	Abandoned	1966
11	Egallalik	64	26'	30"	75	38'	00"	Abandoned	1966
12	Kangeeak	64	32'	30"	75	37'	00"	Abandoned	1958
13	Ikkeerasak	64	25'	02"	75	12'	00"	Abandoned	1958
14	Ahkeeatoollaoo-lavik	64	23'	00"	74	42'	00"	Occupied	
15	Kudloosukvik	64	17'	00"	73	13'	00"	Abandoned	1958
16	Amadjuak	64	01'	02"	72	39'	00"	Abandoned	1960
17	Taksitok	63	40'	00"	72	14'	30"	Abandoned	1966
18	Omiakovik	63	36'	30"	71	17'	30"	Abandoned	1958
19	Kingooah	63	34'	30"	71	16'	30"	Abandoned	1958
20	Eetenek	63	25'	00"	71	58'	00"	Abandoned	1953
21	Kangerklukjuak	63	01'	00"	71	01'	30"	Abandoned	1953
22	Peetokerk	62	49'	00"	70	17'	30"	Occupied	
23	Kangerkluk	62	40'	30"	70	23'	00"	Abandoned	1947
24	Kaigosooktalik	62	44'	30"	70	04'	00"	Abandoned	1959
25	Eevik	62	48'	00"	69	46'	00"	Abandoned	1945
26	Itinipik	62	45'	00"	69	48'	30"	Occupied	
27	Okialiviahlook	62	44'	30"	69	39'	00"	Abandoned	1964
28	Tessiyokudluk	McKellar Bay			----------			Abandoned	1957
29	Ahtanerko	62	40'	20"	69	28'	20"	Abandoned	?
30	Keyukjuak	62	39'	30"	69	33'	30"	Occupied	

Ref. No.	Name	Location Latitude	Longitude	Status	
31	Erkalooeet	62 33' 00"	69 18' 00"	Abandoned	1951
32	Okialiveelook	62 21' 00"	68 47' 30"	Abandoned	1957
33	Okialivikalook	62 12' 30"	67 52' 00"	Abandoned	1932
34	Katoogak	62 08' 30"	67 50' 30"	Abandoned	1952
CD	Cape Dorset				
A	Amadjuak - Hudson Bay Co. post			Abandoned	1938
LH	Lake Harbour				

SOURCE OF DATA: Cape Dorset Area - Simionee, Agiak, Rev. Canon M. Gardener, unpublished reports of M. Hinds, B. Lewis, R.C.M.P. Eskimo Directories.

Lake Harbour Area - Akavak, W. Kemp, Rev. Canon Daulbey, Rev. Canon M. Gardener, R.C.M.P. Eskimo Directories

RECAPITULATION

Year	Camps Abandoned	Camps Occupied
1932	1	33?
1945	1	32
1947	1	31
1951	1	30
1952	2	28
1953	3	25
1957	2	23
1958	6	17
1959	3	14
1960	2	12
1962	1	11
1964	1	10
1966	4	5
1967	Unchanged	Unchanged

APPENDIX F

A DIARY OF ECONOMIC ACTIVITY

CAPE DORSET

MARCH 1959 TO FEBRUARY 1964

March 1959	400 fox pelts traded during this past season
April 1959	Approximately 700 fox pelts were traded in the Dorset trading area. Price was $15.00 to $20.00. These prices are the best paid in over 10 years.
May 1959	Economic conditions fair, though by no means evenly distributed.
June 1959	Economic conditions rather poor.
July 1959	Economic conditions improved
Aug. 1959	Economic conditions excellent, thanks to tourist operation.
Sept. 1959	Economic conditions good. Considering purchase of H.B.Co. Peterhead at Lake Harbour.
Oct. 1959	Economic conditions fairly good.
Nov. 1959	Economic conditions very poor and expected to get worse. No employment and seal hunting almost impossible. No one trapping.
Dec. 1959	Economic conditions slightly improved. Top price for a good fox fur was $24.00
Jan. 1960	Economic conditions poor to fair.
Feb. 1960	Economic conditions improved due to better hunting conditions.
Mar. 1960	Economic conditions good in the settlement but poor outside the settlement.
April 1960	No Data

May 1960	No Data
June 1960	Economic conditions improved as seal hunting was good.
July 1960	Economic conditions good. All Eskimos are well-off at present with an unusual abundance of seals.
Aug. 1960	Economic conditions excellent. Almost every able-bodied man and boy is employed on construction or with one of the survey parties in the field. $2,066.40 went into the economy as a result of ship unloading work.
Sept. 1960	Economic conditions good due to summer activity
Oct. 1960	Economic conditions excellent after a full summer's work.
Nov. 1960	Economic conditions vastly improved due to construction and abundant country food. Co-operative operating a fishing project Tessiuakjuak Lake with two fishermen. They get $0.75 per fish caught and the co-operative sells these to the local Eskimos for $0.50 to $0.75 depending on size. Fox price was $10.00 for good white fox and the H.B. Co. plans to raise it to $20.00. Collected $15.00 through the Bay from each tenant of new, rigid frame house.
Dec. 1960	Economic conditions better than in previous years. A considerable number of foxes were taken and the price was good.
Jan. 1961	Economic conditions only fair. 700 fox skins loaded to date at an average price of $12.00 to $15.00
Feb. 1961	Economic conditions much improved over previous years. The fox price, however, has dropped to $10.00 and the take likewise has dropped.
March 1961	Economic conditions good as a result of a combination of hunting and co-operative and Government employment. Fox prices dropped to $9.50.
April 1961	Economic conditions fairly good.
May 1961	No Data
June 1961	Economic conditions good. The char venture produced, from November 1st to June 1st a catch of 1,259 fish. Approximate total weight was 4,500 pounds. These were sold through the co-operative at $0.50 to $0.75 each depending on size. The price will be increased in the coming year.

July 1961 Economic conditions good.

Aug. 1961 Economic conditions below average due to lateness of shipping season.

Sept.1961 Hunting was rather poor and economic conditions unfavourable due to the late arrival of ships.

Oct. 1961 Economic conditions continue poor.

Nov. 1961 Economic conditions rather poor because of serious shortage of dog food.

Dec. 1961 Fox prices down to $6.00 on an average. Problem with dog food. Stone carving increased.

Jan. 1962 Economy continuing poor by current standards although vastly improved over previous years. Prime fox pelt still $6.00. A system of relief issue by account at the trading stores goes into effect. A single ration is worth $35.00; a double $60.00; a triple $75.00; and a quadruple $100.00 Carvings being produced at a high rate.

Feb. 1962 The people in the camps are desperately poor.

Mar. 1962 Economic conditions good. Chronic dog food problem obviated by seal and walrus catches. Carvings being produced at a high rate, but they (the Eskimos) have yet to reach their peak.

April 1962 Economic conditions good at the beginning of the month but deteriorating towards the end.

May 1962 Economic conditions better than in most years past. Fox take only about 600 during past season.

June 1962 Economic conditions much improved due to increase in wage labour. Hunting also improved.

July 1962 No Data

Aug. 1962 No Data

Sept. 1962 No Data

Oct./Nov./Dec. - Economy hit an all time high with the particularly heavy shipping season and large Government construction program. Along with the Eskimo Co-operative building program, there was work for every able-bodied man, both from the camps and the settlement. Income rose to a peak of $8,000.00 in October and declined to $6,000.00 in November. It fell abruptly by mid-December with the end of the construction season. The price of sealskins remained high at this time.

Jan. 1963 — Wage employment poor due to reduction in casual labour force. The Government payroll totalled $1,306.76. Very little sealskin trading and there were no foxes. 70 caribou were shot between Cape Dorset and Chorbak Inlet.

Feb. 1963 — Wage employment in all agencies brought approx. $3,000 in cash income into the settlement. Income through the sale of carvings, skins and dogs provided an additional income of $1,700.00 Seal and walrus hunting was good. Approximately 50 seals were taken; 8 walrus were shot but 3 were lost. Also, 30 caribou were shot and 4 foxes trapped.

March 1963 — Total cash income from all agencies amounted to $6,000.00 made up of $4,400 in wages paid by all agencies and $1,600 from the sale of skins, carvings and handicrafts. The price for a prime silver jar was $8.00 to $15.00. Approximately 70 caribou, 65 seals, 3 walrus and 1 polar bear were taken.

April 1963 — Cash income was increased over March, with wages from all agencies totalling $4,700.00 and sales of skins, carvings and drawings bringing an additional $7,500.00. The price of prime silver jar was up to $25.00. 100 seals were taken, 11 fox trapped, roughly 50 birds shot; 1 walrus and a number of char were also taken.

May/June " — The economy reached its lowest point of the year during May. Wage employment dropped and the supply of stone for carving ran out. However, with the announcing of increasing sealskin prices, many families moved out of the settlement to camps for spring hunting. By the end of May, income from the sale of skins doubled that of April; a fact that encouraged all but 17 families to leave the settlement for camps. During June, income from sealskin sales increased to five times that of May, reaching a total of approx. $6,500.00 130 seals, 1 polar bear, 2 walrus, 8 caribou and 7 white fox, were taken. Ptarmigan were plentiful, approx. 150 were shot. In June, a catch of 400 seals, 2 caribou and 4 white whale was made. The fishing increased sharply.

July/Aug/Sept - The economy continued its upward trend during the three summer months. Income from the sale of sealskins in July and August was almost double that of May and June sales. Wage employment increased with the arrival of two ships in August. Wage income from stevedoring and construction was about twice that of August. A substantial order from Canadian Handicrafts Guild gave employment to a number of women through the Co-operative Sewing Centre. 22 caribou were taken in the Chorbak Inlet area. Char fishing was carried out extensively in early July and late August.

Oct/Nov/Dec. 1963 - Sea-lift operations and co-operative expansion kept income from wages at a good level during October. As wage employment dropped in November, income from carvings climbed and amounted to $4,000.00 during the last quarter. The sale of skins brought in approx. $11,000.00. Seal hunting declined in November but increased in December. Foxes were plentiful in December as were caribou. There was no food shortage. 5 walrus, 2 polar bear, 10 caribou and 50 white fox were taken in this quarter.

Jan. 1964 - The local economy remained at a good level during January The decrease in wage income was more than offset by $3,000 in cash income derived from carvings, and approx. $3,000.00 obtained from fox pelts and sealskins. Total cash income from all sources was slightly over $10,000. Approx. 100 caribou and 125 fox were taken. Prime sealskins commanded a price of $30.00.

Feb. 1964 - The sale of fox skins and carvings maintained the high level of economy that prevailed in January. Seal hunting increased and caribou were plentiful. Roughly 150 fox, 50 seals and 60 caribou were taken.

Source: Northern Service Officer's Reports - data extracted and compiled by the survey.

APPENDIX G

CAPE DORSET

EQUIPMENT INVENTORY

Year Landed	Type	Model and Year		Condition
1962	Snowmobile, Bombardier	R62	1962	Fair
1963	Tracked-carrier, Nodwell	RN110	1961	Good
1965	- ditto -	RN75	1965	Good
1966	Tractor Shovel, Hough Payloader, 4-wheel drive	H30	1966	Good
1966	- ditto -	H30	1966	Good
1965	Diesel Crawler, Case	1000D	1964	Good
1966	Dump Truck, 5 ton, G.M.C.		1966	Good
1966	Farm Wagon, Normand	A569	1966	Good
1966	- ditto -	A569	1966	Good
1964	Farm Wagon	?	?	Poor (US)
1965	Towed Sleighs, OTACO	OST58	?	Good
1962	- ditto -	OST58	?	Poor
1965	Cement Mixer, Monarch "B"	3SD	1965	Good
1965	- ditto -	3SD	1965	Good
1963	Outboard Motor, Johnson $5\frac{1}{2}$ HP	CD19S	?	Good
1959	- ditto - $5\frac{1}{2}$ HP	CD18	?	Fair
1960	- ditto - $5\frac{1}{2}$ HP	CD19S	?	Fair
1962	- ditto - 3 HP	JW17	?	Fair
1964	- ditto - 18 HP	FD12	?	Good
1966	Ski-doo, Bombardier Olympic		1966	Fair

The equipment is maintained by an Eskimo with previous mechanical training.

APPENDIX H

CAPE DORSET

REPRESENTATIVE MERCHANDISE RETAIL PRICES

Rifles & Guns

Make Model,	Calibre/Gauge	Price
Remington pump, #572	.22	$ 110.00
Winchester, 70	.243	189.95
Lee Enfield, Mk 4	.303	32.95
Cooey, 64 auto.	.22	45.95
Winchester, 250	.225	82.50
Winchester, 94	.3030	88.95
Winchester, 275	.22 Mag.	87.95
Winchester, 270	.22	75.95
Remington, 700	.222	154.95
Stevens, double barrel,	12 gauge	36.00
Cooey, single barrel	12 gauge	59.98

Ammunition

Hornet	.22	Box of 20	3.10
Long Rifle	.22	50	.90
Magnum	.22	50	3.90
Remington	.222	20	3.70
Swift	.220	20	5.60
Savage	.250	20	4.65
Winchester	.270	20	5.50
Winchester	.243	20	5.00
Mauser	7 mm	20	5.20
	10 gauge	25	4.15
	16 gauge	25	3.09
	20 gauge	25	3.60

Outboard Motors

Johnson, 5½ HP	$300.00
Johnson, 3 HP	198.00
Johnson, 18 HP	495.00
Johnson, 28 HP	595.00
Evinrude 18 HP	499.00
Evinrude 6 HP	300.00

Canoes

Freighter, flat stern, canvas c. 22'	660.00	
Freighter, flat stern, canvas 20'	560.00	
Freighter, V stern, canvas 20'	270.00	(clearance)

Ski-doos

Bombardier, Olympic, 10 HP	850.00
Bombardier, Super 14 HP	920.00

Sales - 1963 (10); 1964 (14); 1965 (6); 1966 (14); 1967 (16)

Clothing

Trousers	$ 4.40 - 11.98
Work Shirts	2.19 - 4.95
Sports Shirts	3.98
Underwear, thermal, drawers	8.89
tops	8.89
Outer trousers, insulated	24.00
Work Socks	1.80
Boots, rubber, low-cut	5.80
waders	11.50
Coveralls	7.95

Camping Supplies

Canvas, 14 oz. duck, per yd.	1.25
Stove, 2 burner, Coleman	29.95
Funnel	.37
Generators for Coleman Stove	2.59
Gas Can, 5 gal. plastic	5.95
Pressure Lamp, Coleman, small	19.95
Frying Pan, cast iron	4.95
Kettle	3.95
Duffle cloth, per yd.	9.98

Grenfell Cloth, per yd.	3.98
Parka Trim, wide, per yd.	6.30
Dunnage Bag, large	3.95
small	3.50
Sleeping Bag, Sierra, Woods	42.00
Sleeping Bag, Arctic 3-star, Woods	112.00
Blanket, wool	8.95 - 12.49

Marine Finishes

Urethane Varnishes, quart	3.20
Paints, quart	2.05 to 3.05

Due to changing prices, a comparison of those prices shown above with those charged in the south would not be too meaningful. It is notable, however, that the prices attached to many items are generally lower in the north than in the south. This can only be attributable to perhaps better buying practices by the northern retailer or extravagant mark-ups in the south.

APPENDIX I

AUTHORIZED RATES FOR PREVAILING RATE EMPLOYEES

NORTHWEST TERRITORIES

(in effect June, 1966)

Classification	Rate	Classification	Rate
Carpenter	$3.25	Labourer	$2.05
Cook, first class	2.25	Laundry Worker(male)	1.90
" second "	1.90	" " (female)	1.55
" third "	1.80	Light equip.Operator	2.25
Driver	2.20	Machinist	2.90
Driver heavy equip.	2.35	Maintenance Man -1	2.65
Electrician	3.70	Maintenance Man -2	2.40
Equipment Mechanic	2.50	Maintenance Mechanic	2.65
Heavy Equip. Mechanic	2.85	Motor Mechanic	2.50
Heavy Equip. Operator	2.80	Motor Mechanic Helper	2.10
Kitchen Helper	1.30	Oil Burner Mechanic	2.50
Plumber & Steamfitter	3.60	Painter	2.95
Power Plant Operator	2.95	Pipefitter	2.50
Refrigerator Mechanic	3.25	Sheet Metal Worker	3.25
Trades Helper	2.10	Shovel Operator	3.20
Water Supply System Operator	2.35	Welder	2.65

Notes: All kitchen staff are provided with free meals in addition to the hourly rates assigned above.

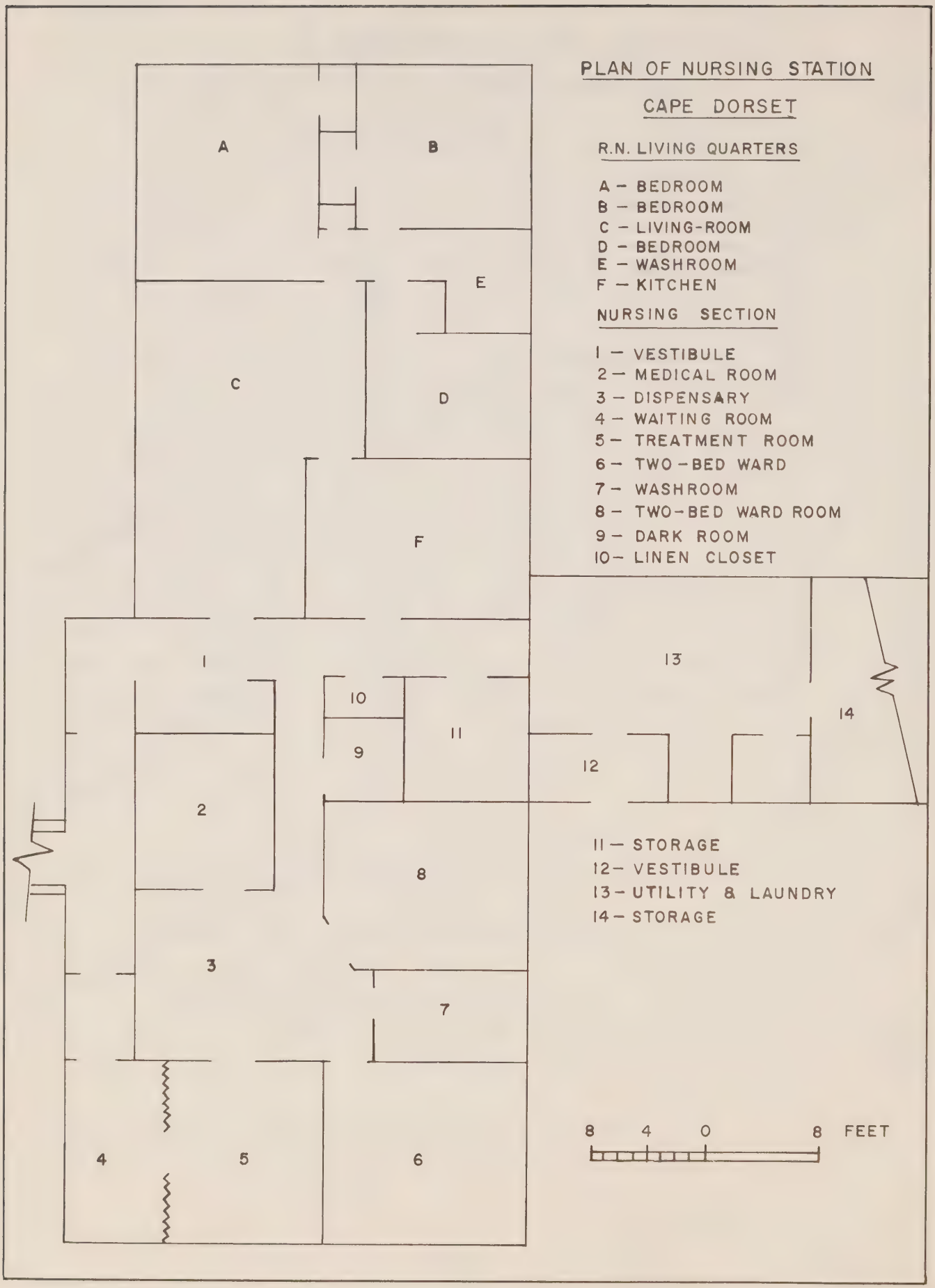
The rates apply to non-Eskimos and Eskimos alike.

Isolated Post Allowances (IPA) are paid aditionally to the rates assigned to each category.

APPENDIX J


WEST BAFFIN ESKIMO CO-OPERATIVE
BUILDING COMPLEX
1 - 1962 "A" FRAME HOUSE
2 - 1967 " " "
3 - 1961 WAREHOUSE
4 - 1963 CARPENTRY & SEWING
5 - 1959 STONE SHOP
6 - 1957 PRINT SHOP
7 - 1967 WAREHOUSE
8 - 1961 " "
9 - 1961 STORE
10 - 1966 WAREHOUSE
11 - 1966 FLOUR WHAREHOUSE
12 - 1961 WAREHOUSE
13 - 1960 POTTERY SHOP
14 - 1962 PRINT SHOP & OFFICE
15 - 1962 WAREHOUSE
75'
100'
50'
25'
SCALE 100' = 1 inch

APPENDIX K


PLAN OF NURSING STATION
CAPE DORSET
R.N. LIVING QUARTERS
A – BEDROOM
B – BEDROOM
C – LIVING-ROOM
D – BEDROOM
E – WASHROOM
F – KITCHEN
NURSING SECTION
1 – VESTIBULE
2 – MEDICAL ROOM
3 – DISPENSARY
4 – WAITING ROOM
5 – TREATMENT ROOM
6 – TWO-BED WARD
7 – WASHROOM
8 – TWO-BED WARD ROOM
9 – DARK ROOM
10 – LINEN CLOSET
11 – STORAGE
12 – VESTIBULE
13 – UTILITY & LAUNDRY
14 – STORAGE
8 4 0 8 FEET

APPENDIX L

HUNTING RECORD

Location - Vicinity of Cape Dorset

Date	Time	Hrs.	Hunting Method	Hunters	Species & No.	Shots Fired	Seals Missed	Kills	Kills Retrieved	Sunk/ Dived	Kill Doubtful	Weather
1-2/7/67	1500-0800	17	open water	2	R-11	15	9			2	2	Clear Light
			"		B-6	6	5	1	1	1	1	wind
2-3/7/67	0800-0330	19½	"	2	R-8	11	3	4	1	4	1	Clear Light
					B-1	1	1					wind
5/7/67	0600-1000	4	"	3	R-2	4		2	2			Clear/warm Light wind
10/7/67	1300-2400	11	"	2	R-7	21	3	4	3	1		?
					B-1	3		1	1			
3/6/67 (near camp 14)	0930-1830	9	basking	2	R-9	12	6	3	3			Fast-ice edge 5 mls. Cloud 8/10 Temp. 20 F.

Source of Data: Area Survey, 1967 R - Ringed Seal B - Bearded Seal

APPENDIX M

HUNTING RECORD

Location - Vicinity of Lake Harbour

Date	Time	Hrs.	Hunting Method	Hunters	Species & No.	Shots Fired	Seals Missed	Kills	Kills Retrieved	Sunk/ Dived	Kill Doubtful	Weather
18/2/67	0845-1815	10	Breathing hole	16	R-8	-	-	8	8			Clear/-30° No wind
20/2/67	0900-1730	8½	"	3	R-2	-	-	2	1	1		Clear/-35° No wind
24/2/67	0830-1745	9¼	"	5	R-4	-	-	1	1	3	3	Clear/-38° Wind light
23/2/67	0830-1830	10	"		R-1	1		1	1			Clear/-35° No wind
27/2/67	0830-1930	11	floe edge	3	R-4	?		4	2	2		Clear/-32° No wind
1/3/67	0900-1800	9	"	7	R-4 B-1	6(?) (?)		4 1	2	2 1		Clear/-33° No wind
10/3/67	1400-1830	4½	"	6	R-2	3(?)		2	2			Clear/-43° No wind
20/6/67	1430-2300	8½	"	5	R-13 B-1	107 2	10 1	3	1	2 1		
21/6/67	0030-1230	12	"	5	R-8 B-1	39 1	5	3 1	1 1	2		
26/6/67	0930-2345	14¼	"	5	R-7	9	3	3	2	2	1	
12/4/67	1030-1345	3¼	basking	3	R-6 B-3	19 6	6 2	1	1			Clear & Bright

Source of raw data: W. Kemp, Lake Harbour, 1967

APPENDIX N

NETTILLING LAKE TEST FISHERY

BY

H.M. BUDGELL, PROJECTS OFFICER

D.I.A.N.D.

1967

At Nettilling Lake on Baffin Island a pilot project directed toward an assessment of the char potential of the lake was carried out over three seasons, 1963-64, 64-65 and 65-66. The first season's work was conducted jointly by the Fisheries Research Board, Department of Fisheries, and the Industrial Division, Department of Indian Affairs and Northern Development.

During the first season, field parties were flown to the lake from Frobisher Bay in May and positioned at various locations before break-up. After break-up, about August 18, test fishing was conducted from the Amadjuak River and Burwash Bay at the southern end of the lake to the Koukdjuak River on the west shore, and thereafter, at Mirage Bay at the north end of the lake. One party, meanwhile, sampled the Koukdjuak River to tidewater in the Foxe Basin.

Work carried out in this first season established a large population of land-locked char in Nettilling Lake. However, the conclusions drawn from the results were that because of the high rate of parasitic infestation, estimated at 40 per cent of the lake population, and the generally poor quality, a commercial operation to utilize the lake char was not feasible.

Following extensive test fishing in the lake, one field party was located on Niko Island near where the Koukdjuak River issues from the lake with the object of test fishing the sea-run char expected to pass up the Koukdjuak River to spawning grounds in the lake. These were identical at the location on September 7, but as the party was not equipped to stay on location over freeze-up and air transport from Frobisher Bay was terminated during the first two weeks in September, the party was forced to leave without determining either the extent or duration of the sea-run migration. For the second season, 1964-65, a party consisting of a Projects Officer, a commercial lake fisherman, and three Eskimos from Frobisher Bay was flown to Burwash Bay on August 15.

This party established a camp on Niko Island for the express purpose of test fishing the sea-run char identified during the previous season. Test fishing in August and September established a potential catch of 50,000 pounds, round weight, per season. As happened before, the party was forced to leave at the termination of the flying season.

Plans for the 1965-66 season called for a limited development of the resource without a substantial investment in capital equipment. Accordingly, it was decided to salt-cure the char in barrels. An additional two Eskimos from Pangnirtung and a commercial fisherman, under the direction of a Project Officer, were flown to Niko Island for that purpose on August 18.

Transportation arrangements concluded at Frobisher Bay were on an aircraft-availability basis for a PBY (Canso) which was otherwise employed. As the normal requirements for this aircraft at Frobisher Bay were not fulfilled, it was possible for the Canso to make only two trips to the site, August 26 and 27. The lack of transportation curtailed seriously the supply of barrels and salt to the site and at the same time pointed out the impracticability of attempting to supply a project on an aircraft-availability basis.

Sea-run char were harvested commencing September 1 and the brined pack amounting to 27 barrels was completed on September 18. The total dressed weight amounted to 5,940 pounds. Test fishing was continued until September 23. The following day the party left Niko Island and travelled east, across the lake, portaged over the overland route to Nettilling Fiord in Cumberland Sound where it was picked up by longliner and transported to Pangnirtung by October 1.

The results of the last season's work confirmed the estimate given in 1964-65 of a potential of 50,000 pounds round weight per season. At the same time, however, it emphasized the obstacles and expense likely to be encountered by a commercial venture at Nettilling Lake.

Some of these can be summarized as follows:

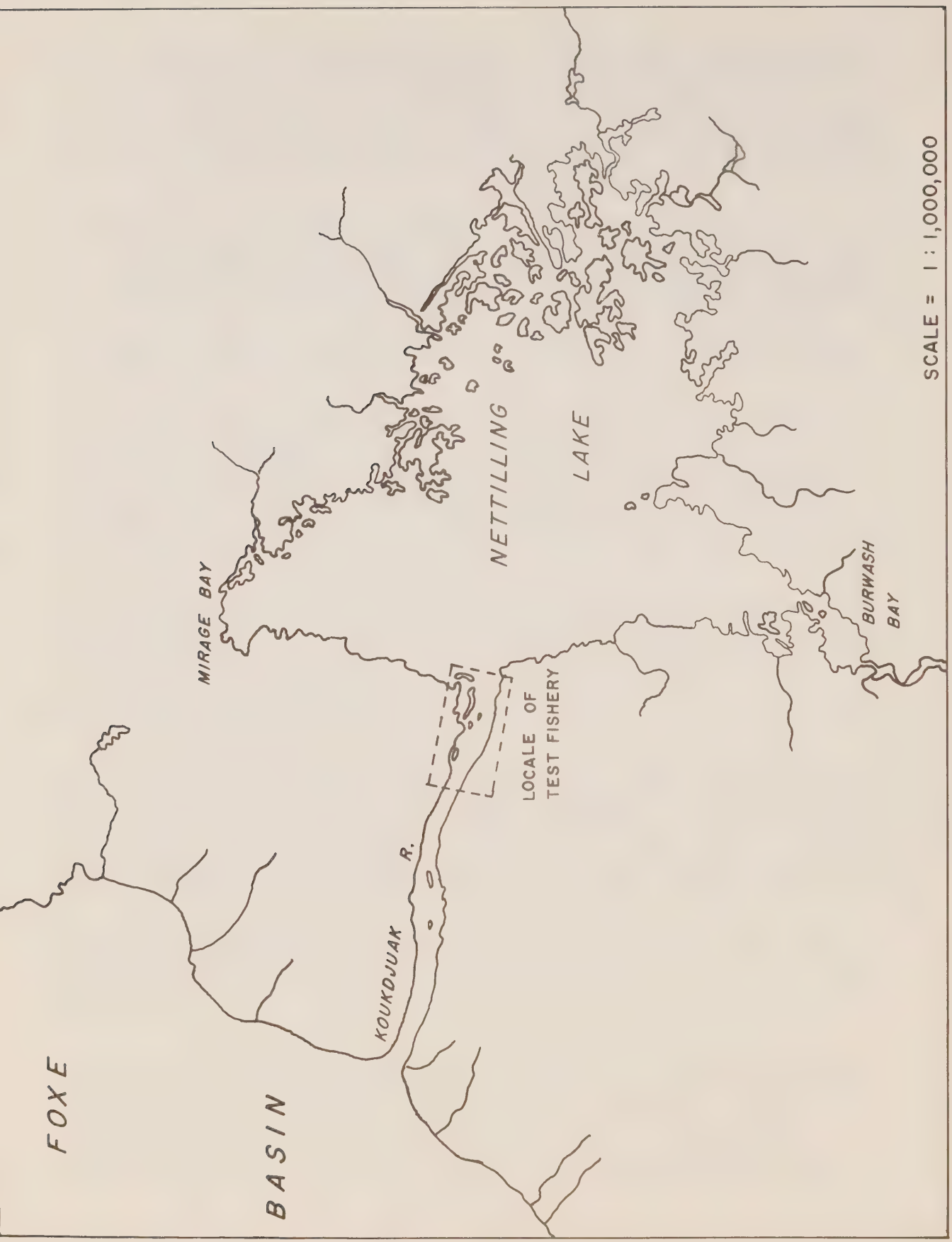
The lake is ice-free between August 15 and 18. Sea-run char first appear in small numbers in the Koukdjuak River about September 1 and the run is in full flood during the 9th to 12th of September. At this time the D.O.T. regulations prohibit the operation of amphibious aircraft in the area. This effectively terminates transport between the lake and Frobisher Bay. A commercial fishery must, therefore, process the catch at the site.

The sea-run passes up the river close to shore on its south side and catches made between the island channels and on the north side of the river are negligible. Space for nets along the south side of the river is limited, and it is not advisable to set nets in the lake because of infestation.

Because the run is a migration run it is continuous for perhaps three weeks and it becomes practicable to lift the nets frequently. The test party estimates at least four lifts per day is realistic. Weather conditions at the site from mid-September forward are harsh and a commercial operation would have to take into account shelter, heat and light and transportation for the workers returning to their homes on

completion of the season's work. As aircraft are not available at that time transportation must be overland to Pangnirtung, regardless of whether the product is preserved in salt, frozen, or canned. Transportation to either of the shipping points, Frobisher Bay or Pangnirtung, is not practicable until the ice is firm in January. Extra costs must be incurred, therefore, in order to preserve the product while awaiting transportation.

It has been ascertained through the results of the pilot project that a commercial fishery cannot be made viable at this time due to environmental circumstances, but may prove feasible in the future as regional development progresses.


FOXE
BASIN
KOUKDJUAK R.
MIRAGE BAY
NETTILLING
LAKE
LOCALE OF
TEST FISHERY
BURWASH
BAY
SCALE = 1 : 1,000,000

APPENDIX O

SEAL NETTING - CAPE DORSET

Seal netting would not appear to be a particularly attractive method of harvesting seals in the Cape Dorset area. Generally speaking, the same might be applied to the Lake Harbour area, even though in the latter area one Eskimo has been employing such a device with limited success.

The ice and tide conditions at Cape Dorset were better known to the survey than those at Lake Harbour and two factors associated with them appeared to militate against successful seal netting. The first of these is a dearth of open leads in which to drop the net, and the second is the sophisticated anchoring devices needed to secure the net against the exceptionally strong tidal currents that are peculiar to the area.

Seal netting was attempted for a number of days commencing on June 19. The only open water in the vicinity was at the edge of the fast-ice which at that time was about one mile from the settlement. As the floe edge was barely on the horizon and an off-shore breeze was blowing, the net was let down the full length of the ropes which were later tied to steel stakes driven in the ice. The net used was 150 x 40 meshes x 17 inches. Rocks were tied to the bottom of the net to supplement the lead line. The time was 1900 hrs. and the party returned to the settlement by ski-doo.

The net was checked the following morning and was found empty. A second check was made at 1500 hrs. in the afternoon but on this occasion the pack-ice which was barely in sight in the morning was now in contact with the fast-ice. The net had been hoisted from below by a combination of ice and tidal currents but was retrieved with considerable difficulty. After some searching from high points with the binoculars a small, open lead was sighted a few miles from Dorset. It measured only four feet in width by several hundred feet long but the net was lowered into it.

The net was immediately swept up under the ice by the currents so additional rocks had to be acquired as weights. Even with these it became clear that the net would only come to rest for the interval between tides, and it was left with that thought in mind. The time was 1030 hrs., June 22.

The net was pulled on the morning of June 23 at 0800 hrs. and the angle of the ropes was a fair indication that the net was simply oscillating back and forth with the tidal currents. The Eskimos were rather indulgent with the exercise having been through the same experience with nets that had been supplied at some time previously.

None of them were enthusiastic about nets, having stated that they were expensive, bothersome to move around, susceptible to damage and seal movements were unpredictable. In the absence of proper grapple anchors, further attempts were abandoned.

APPENDIX P

SOAPSTONE MINING

Local Equipment & Experience

Cape Dorset

Transport

1	Peterhead, Eskimo owned, cargo capacity	8 tons - condition good
1	Peterhead, " " " "	7 tons - condition good
1	Peterhead, H.B.Co. " " "	10 tons - condition good

Drilling Equipment

1 PIONJAR, model BRH 50, chuck size 7/8 in. x $4\frac{1}{4}$ in., to accommodate drill rod in lengths of 3 and 6 feet. The equipment is owned by the West Baffin Eskimo Co-operative and is in good condition.

Explosives

A quantity of explosives and priming caps is kept at the settlement in suitable storage facilities.

Experience

Soapstone has been mined by the Eskimos of Cape Dorset for several years, usually under the direction of the Secretary of the W.B.E.C., a non-Eskimo, who possesses a blasting permit. Mining operations extend up to a distance of 400 miles round trip and recovery is in the order of 25 or more tons.

APPENDIX Q

SKI & TRACK - SNOW VEHICLES

The vehicle in question has become the primary means of transport for the Eskimo for the period November through June of each year. The "Ski-doo", a model manufactured under the name "Bombardier", is the most popular machine in the area, due probably to its early entry into the market.

The Eskimo or non-Eskimo traveller in the Arctic is usually forced by circumstances to use high loading factors frequently beyond the design capability of the machine. In spite of this, however, the Ski-doo is a remarkable performer even in the worst of surface conditions.

A Ski-doo was used in the conduct of the survey for about 350 miles of travel with but one major break-down. This, however, occurred 90 miles from the nearest settlement, Cape Dorset. Fortunately, the trip was made with two Ski-doos and this meant a return loading for the remaining vehicle in excess of 1,300 pounds. From these trips, and in conversation with others, a pattern of machine faults and failures evolved and these are recounted below with the hope that the manufacturer(s) might at some time feel it worthwhile to develop a "work-horse"model, using the present exterior design. It will be clear that some of the following comments concern faults amenable to simple remedy and are not true failures requiring design, or other significant changes.

Fault - Part No. ZP80, Intake Silencer Assy - In order to gain access to the carburettor it is necessary to remove two securing nuts that are sunk in wells in the casing.

Suggestion - replace these, which are hexagonal machine nuts, with deep-shank wing nuts, the wings of which project slightly beyond the cover face.

Fault - Part No. SK1570B Hood - When engine adjustments and minor repairs of all kinds are necessary in and about the engine,the clutch assy and the exhaust manifold, a constant problem arises because the hood is firmly fixed.

Suggestion - hinge at the side or front and secure with spring loaded fasteners.

Failure - Part No. Drive sprocket flange, front and rear - This is a principal point of failure. The flange is a saucer-shaped metal stamping of about 16 gauge C.R.S. through which the spindle is fitted. Invariably the point of failure occurs near the junction of the flange with the spindle-collar, resulting in a rotational shear due to load stress.

Suggestion - If this is a built-in relief point for strain then it might better be transferred to a part more accessible to the operator who, in

this case, is also the repair man. The drive chain, belt or clutch grab might be considered as built-in relief locations. Fourteen gauge C.R.S. or harder might be sufficient for the flange. The spindle would likely require an increase in steel gauge as well.

Failure - Part No. Ski Track - The track rarely fails due to longitudinal stress but is a principal point of failure due to the development of transverse cracks. The extreme cold reduces resilience causing cracking on impact.

Suggestion - rather than resorting to experimentation with other compounds that may offer greater resilience at low temperatures, it is suggested that a sectional rather than a continuous track be considered. If the present track could be visualized in separate sections to conform to the present drive cleats, then a damaged section could be removed and replaced on the trail with an appropriate tool.

Fault - Part No. SK44D Ski Runner - These frequently buckle under conditions of high impact and result in a buckled ski. Impact is a fact of Ski-doo operation in the Arctic and although this fault would not normally cause the machine to be immobilized, it makes for difficult operation.

Suggestion - perhaps a runner of wider diameter would suffice.

Fault - Part No. SK42AR & AL Link Plage Spring - This spring appears to be too weak to function as intended.

Suggestion - Increase spring-wire gauge

Fault - SK101G, Windshield - Not high enough for Arctic operation and too low even for Eskimos, also it is of frail construction.

Suggestion - Add five inches and use a plastic of greater thickness with a stronger frame.

APPENDIX R

POTTERY EQUIPMENT

That which follows is a listing and approximate valuation of pottery equipment presently in the possession of the West Baffin Eskimo Co-operative at Cape Dorset.

Description	Approx. Value
1 AMCO, high fire economy electric kiln, HF - 96, 220 VAC, 18" x 18" with pyrometer	$ 500.00
1 Potter's Wheel, DNIPRO,	200.00
1 Tripple Beam Balance	65.00
Quantity of glazing materials and spatulas	

The equipment is presently stored in a small building which has been electrically wired for the kiln.

APPENDIX S

RECONNAISSANCE OF THE FOXE PENINSULA

That which follows is a summary of a reconnaissance of the Foxe Peninsula coastline carried out by T. Badenduck in May of 1967, in conjunction with the area economic survey. The purpose of the reconnaissance was to combine personal observation with information pertinent to old camp and harvesting sites in order to arrive at a reasonable assessment of the renewable resource potential from Bowman Bay to Cape Dorchester, thence along the coast to Cape Dorset.

The reconnaissance does confirm that the coastline between Bowman Bay and Cape Dorchester is not amenable to harvesting due to the almost complete lack of seals. It shows further that harvesting holds little attraction for the hunter along the coast between Schooner Harbour and Cape Dorchester.

The reconnaissance was made using two dog teams consisting of a total of 31 dogs and two Eskimos as drivers and guides. The duration of the trip was 24 days, commencing May 8 and terminating May 31. The total mileage covered amounted to approximately 465. The route is plotted on the companion map and shows the entire course of the reconnaissance and where travel on sea-ice or land was found to be necessary.

The only Eskimos encountered on the trip were seen at camps Nos. 9 and 14 on the outward leg. A tent was used for sleeping and heat was provided by a double burner camp stove which also served for cooking.

The logistics of the reconnaissance required the movement of a quantity of essential camp equipment, personal clothing, food and other expendable supplies on the two komatiks pulled by the dogs. The weight of equipment amounted to 500 lbs. spread over the two komatiks. To this figure was added on departure 800 lbs. made up of expendable supplies. The weight of the latter continually varied according to the rate of consumption, and the addition of country food for men and dogs which had to be acquired along the way.

The direct cost of the reconnaissance, or out-of-pocket expense, amounted to $820.00 made up of:

Hire of dog teams and Eskimos	$ 576.00
Hardware & misc.	124.00
Human & dog food	120.00

Hardware & Misc.

1 Coleman Camp Stove, 2 Burner
1 Funnel
1 Can of Lypsyl
1 Can of 3-in-1 oil
1 Box of soap powder
4½ yds. of duffle & grenfell cloth
4 Boxes of .303 ammunition
2 Replacement Generators
6 Candles
2¼ lbs. of rope
1 Ball of twine
1 Can opener
5 Boxes of .3006 ammunition
10 Gallons naptha gas

Human & Dog Food

2 Boxes soda crackers
12 " pilot biscuits
2 Pkgs. sweet biscuits
2 Pkgs. instant milk powder
8 " raisins
5 Tins baking powder
4 Bottles ketchup
8 Boxes cereal
4 lbs. bacon
6 lbs. butter
2 lbs. dried apricots
2 Cans jam
4 Pkgs. chocolate
20 Seals chopped and bagged
1 lb. coffee
4 lbs. tea
25 lbs. flour
8 tins evaporated milk
10 " pork & beans
20 lbs. sugar
10 lbs. oats
1 lb. salt
6 lbs. lard
4 lbs. sausage
2 lbs. dried peaches
6 Rolls toilet tissue
2 Pkgs. matches
2 Pkgs. absorbant tissue

The above list was augmented during the trip by country food obtained through the killing of: 5 caribou; 6 ringed seals and 11 ptarmigan, which would yield roughly 800 pounds of meat, fat and viscera. The bulk of this food was required for the dogs.

8 - 12 May: The first four days of travel placed the party on the east side of Chorbak Inlet. Travel was mainly on the sea-ice for the entire distance. On the first two days weather conditions were overcast, with temperatures at or just above freezing, accompanied by falls of heavy wet snow. Temperatures fell to below freezing at twilight. The last two days brought clear conditions with mild temperatures. The trip thus far was uneventful. While staying overnight with the family at Camp 9, upwards of 1000 eider-ducks, 8 ringed seals, 9 geese and 9 ptarmigan were sighted; all in and around Andrew Gordon Bay.

13 - 18 May: Travel for the first two days was mainly overland using connecting lakes to make the journey easier for men and dogs. The weather started out clear but later the sky became over-cast and gusty winds developed. A sortie was made on to the sea-ice at Cory Bay, but within

one mile from the shore the ice conditions became progressively worse so travel was continued on the land within sight of the sea-ice. Much old ice is known to persist in the Foxe Basin and this would account for the impossible condition of the sea-ice surface.

Most of the dogs broke loose on the 15th of May during a caribou hunt and many hours were lost in an effort to round them up. The party travelled as far as Bowman Bay, and in the succeeding few days retraced its route to Cary Bay. No seals were sighted whatever, but 23 caribou, 3 wolves, 5 geese and 6 ptarmigan were sighted over the Cory Bay - Bowman Bay circuit. One caribou was shot by the party.

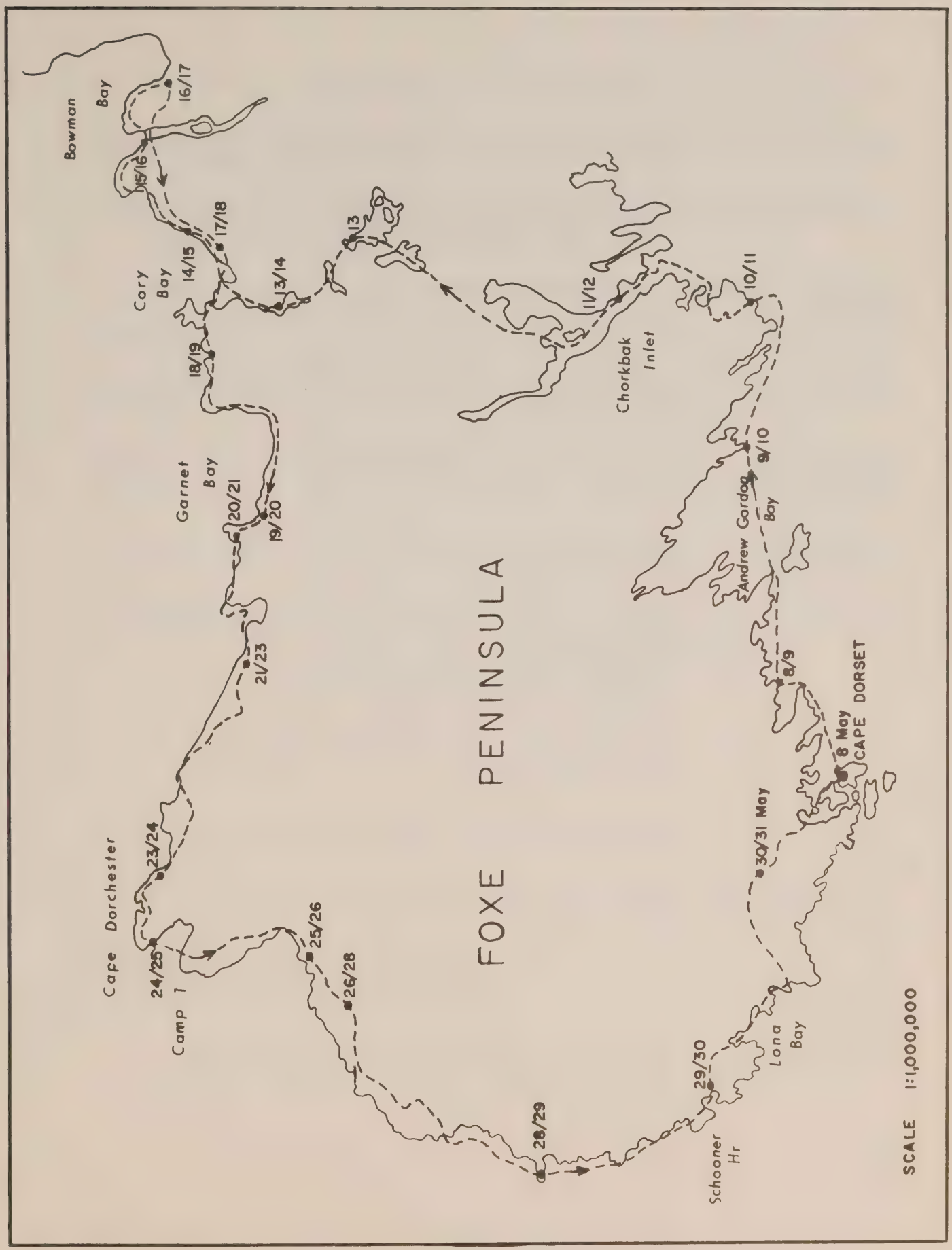
19 - 24 May - This period saw the party complete its journey from Cory Bay to Cape Dorchester along the north coast of the Foxe Peninsula, stopping at the abandoned site of Camp No. 1. Weather conditions over this leg were for the most part over-cast with considerable snow-flurries. The snow base was undergoing deterioration and softened noticably making it very difficult for the dogs. Temperatures were consistently just above freezing during hours of light, dropping off to below freezing with the onset of twilight and darkness.

Sea-ice conditions over the entire coastal sector were virtually impossible for travel and most of it had to be done on the land. One dog team broke loose on the 20th of May and the dogs scattered. Three hours were required to run them down. Sightings on this leg included 7 caribou, three of which were shot, 16 ptarmigan and 5 seals. The latter were sighted at Garnet Bay and one was shot. Some open water was seen in the vicinity of Dorchester Bay. At the old site of Camp No. 1 the party found the remains of a number of frame houses which had been covered with turf as insulation, 1 kayak, 2 komatiks, several hundred fox traps and assorted implements and a G.S.C. survey marker bearing the inscription C 31. Polar bear tracks were also noted at the old site.

25 - 29 May - The distance made by the party during this period was reduced by rain for the whole of one day, following which temperatures dropped to freezing, making for improved travelling conditions. Winds ranged up to about thirty miles per hour but lessened considerably toward the end. some snow-flurries and blowing snow were encountered as well.

Travel on freshwater ice became increasingly difficult due to melting and travel on the sea-ice was superior, even though there was much slush. The numbers of seals sighted increased tremendously on approaching Schooner Harbour and altogether 136 were counted in addition to the sighting of 3 caribou and a few ptarmigan. In the vicinity of Schooner Harbour raised beaches up to an elevation of some 200 feet were noted.

30 - 31 May - The final leg of the reconnaissance encountered deteriorating snow and ice conditions under rising temperatures. Thirty-six seals were sighted south from Lona Bay, and also 11 geese. An abandoned Peterhead boat was also seen. The party arrived at Cape Dorset at 1500 hours.


FOXE PENINSULA
Bowman Bay
16/17
15/16
17/18
Cory Bay
14/15
13/14
13
18/19
Garnet Bay
20/21
19/20
21/23
Cape Dorchester
23/24
24/25
Camp 1
25/26
26/28
28/29
29/30
Schooner Hr
Lona Bay
30/31 May
8 May
CAPE DORSET
8/9
Andrew Gordon Bay
9/10
Chorkbak Inlet
11/12
10/11
SCALE 1:1,000,000

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